The Lettsomian Lectures

ON

CERTAIN DISEASES OF THE BLOOD-VESSELS.

Delivered before the Medical Society of London

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LECTURE III.[1]

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MR. PRESIDENT AND GENTLEMEN,—The very interesting problems connected with the occurrence of thrombosis and the great practical importance of the affection are, I hope, a sufficient justification for my devoting this lecture to that subject. Ever since the science of physiology has existed the coagulation of the blood has been a phenomenon of absorbing interest to physiologists, and although many keen observers and profound thinkers have devoted much patient labour to its study we have to confess that it remains to-day in great measure an unsolved mystery. But if the coagulation of the blood is one of the great elemental problems to the physiologist, thrombosis, or the coagulation of the blood in living blood-vessels, is a theme of equal interest and importance to the pathologist and to the practitioner of medicine and surgery. To its beneficent agency we owe the very existence of our race. The great function of reproduction seems to be specially dependent upon the benign influence of thrombosis in sealing the tiny vessels in the ovary when an ovum bursts from the Graafian follicle, in closing the ruptured vessels of the torn hymen, and in plugging the much larger uterine sinuses which are opened by the separation of the placenta. The whole art of surgery may without any exaggeration be said to have been possible only because blood may coagulate within living vessels and the debt of surgery is perhaps only fully realised when one stands almost impotent beside the ceaseless dripping from a wound in a hæmophilic patient. For most of us, I fear, the word "thrombosis" conjures up before our minds not these benign effects but some of those disastrous results which we so often see following upon the untimely clotting of blood within the vessels. We think of pains and long-drawn-out disabilities, of extended periods of rest and idleness, perhaps of permanent lameness or paralysis, or even of sudden death, or the ante-mortem agony, all of them so often resulting from thrombosis. Indeed, it plays almost as prominent a part in disease and death as in the preservation of health and life; perhaps we hardly realise how large a part it plays and it is not uninstructive to use some spare moment by trying to count up the many and different forms in which we meet with thrombosis and how enormous an advance in practical medicine it will be when thrombosis will be known only as a beneficent phenomenon and when we are able to prevent its occurrence as a baneful process. As a very minor illustration of the importance of thrombosis and of the large influence it may have in marring a life I may mention a case I saw last year of a man, 49 years of age. He told me that in 1876 he was attacked with typhoid fever and during his convalescence he suffered from thrombosis of first one femoral vein and then the other; for this he was laid aside for 18 months. Ever since that time he has been liable to thrombosis from slight injuries and, indeed, it has often occurred without obvious exciting cause, and out of 25 years he has spent no less than six years, two months, and one week invalided by these successive clottings! When I saw him last July he had plugging of the left median basilic and the lowest inch of the basilic vein, which had quickly followed upon his being rather roughly seized by the left elbow. I feel sure that all of you can recall case after case where blood-clotting has proved almost as great a bar to a happy, useful, vigorous life as in this case. I forbear to speak of those many tragedies that we witness as the result of the sudden detachment of one of these clots.

It is no wonder, then, that the literature of thrombosis is very extensive and that many of the greatest pathologists—John Hunter, Cruveilhier, Virchow, Paget, Lister, Cohnheim, and a whole host of others—have made it a special study and have endeavoured to fathom the deep mystery that covers the origin and nature of intravascular coagulation. I cannot attempt to sketch the history of the theory of thrombosis, how it has gradually been freed from error and misconception and amplified by new facts. I propose only to touch upon a few points and to mention one or two of the less commonly seen forms of thrombosis that have happened to come under my observation.

The first appearance observed in circulating blood about to clot is the presence of minute protoplasmic masses called "platelets" which becoming increasingly viscous cohere into tiny irregular masses. These platelets are probably not constituents of normal circulating blood, but are derived from the red corpuscles, possibly from their disintegration. Their increasing viscosity is probably dependent upon some unknown condition of the blood plasma. Around these minute masses of agglutinated platelets fibrin is deposited and incloses corpuscles in its meshes if the blood-stream is not so turbulent as to "whip" them out of the forming fibrin. This fibrin is deposited from the blood in such a way as to impart to the clot a definite structure. But the question that interests us most is, Why do these clots form? What is the condition antecedent to the formation and agglutination of the platelets? Is it to be sought in the blood or in the blood-vessel? These are questions as old as the scientific study of pathology and a full and completely satisfactory answer to them is not yet forthcoming. John Hunter regarded a plastic inflammation of the vessel wall as the primary and essential step in the whole process and Cruveilhier advocated the same view. Virchow in his great work on thrombosis and embolism laid stress on the opposing view and regarded the coagulation as a blood change effected by some alteration in the blood itself independent of changes in the vessel-wall, which, however, were often set up by the presence of a blood-clot. More lately, and as the outcome of the study of micro-organisms and the part they play in so many forms of disease, it has been shown that in many thrombosed vessels bacteria are present both in the vessel-wall and in the clot, and it is thought that these organisms may be the primary cause of the coagulation. Opinions differ, however, as to whether the micro-organisms produce the clotting by acting directly upon the blood-cells or whether by their presence in the vessel-wall they set up changes which unfit them for their special function of maintaining an open channel for the blood and thus lead to blood coagulation. It is evident that if a blood change is the chief cause of intravascular coagulation there must also be some local condition that determines the thrombosis at a particular part of the system. This is a problem of exactly the same kind as that presented by other local manifestations of general infections, such, for example, as acute infective osteo-myelitis, tuberculous and syphilitic osteitis. In each case there is a general infection and a localising influence.

As regards the blood itself, we must abandon the idea that a condition of hyperinosis—an excess of fibrin—ever plays any part in the causation of thrombosis. The proportion of fibrin present in the circulating fluid no doubt varies within somewhat wide limits, but the greater or less tendency to thrombosis never depends upon the more or less of fibrin present, but upon some agent that excites the separation of the fibrin from the plasma. The blood changes that might bring about thrombosis we may suppose to be one or more of the following: (1) a change in the corpuscles leading to their di-integration; (2) an increase in the viscosity of the platelets; (3) an increase in the fibrin ferment; and (4) an increased liberation of fibrin ferment. It is possible that various micro-organisms or their toxins may influence in some way or other either the formation of platelets from red corpuscles or the production of fibrin ferment in the blood. It is also possible that certain products of inflammation absorbed into the general blood-stream may have the same effect. Bearing upon this question is the well-known fact of the tendency of a clot once formed to extend—in the direction of the circulation, it is said. This growth of a clot is sometimes very rapid and very extensive and one explanation of it is that there escapes from the clot first formed some element capable of exciting coagulation in the adjacent blood, fibrin ferment possibly. If this is so it affords support to the view that a blood change may be both the primary step in thrombosis

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and the direct cause of the coagulation. Conversely, it has been shown that a state of the blood may be induced in which coagulation cannot occur, and it is thought that an exhaustion of fibrin ferment may actually be the nature of this change. The late Sir William Roberts suggested that gouty thrombosis might be due to the presence in the circulating blood of minute particles of uric acid which he thought might have the same effect in exciting coagulation as the addition of minute crystals or other fine particles to recently shed blood.

Thrombosis is so commonly a localised affection that we are forced to consider the local conditions which influence it as of primary importance. They may, so far as we know, be grouped under two heads—(1) changes in the nutritive condition of the vessel walls and (2) changes in the regular equable flow of the blood. The changes in the vessel wall include all traumatic, inflammatory, and degenerative changes—however produced—and, of course, include the consequences of the invasion of the tissues by streptococci and other micro-organisms. It is when these changes affect the integrity of the inner coat and particularly its endothelial lining that coagulation is most prone to occur. I referred to this point in my last lecture, and we saw in the disease we were then considering—arteritis obliterans—a striking example of the influence of disease of the tunica intima in causing clotting. Atheroma, calcification of the middle coat of an artery when so advanced as to interfere with the nutrition of the internal coat, acute infections of vessels either from without or from the blood within them, and all forms of injury are frequent causes of thrombosis and in many instances appear to be the sole causes acting independently of any special blood condition. However, we must not too readily conclude that a clot within a diseased vessel is caused entirely by that disease. In some cases an alteration in the blood is probably a contributory cause. The disease in the vessel is often very chronic and coagulation may be the result of ill-understood cumulative conditions. The full vitality of the blood is only maintained when the circulation is vigorous and all the great functions are regularly discharged. Diseases of blood-vessels are so very often associated with imperfections in the circulation and with defects in one or other of the great viscera that it must be that some change is often present in the blood flowing through these diseased vessels—a change predisposing it, perhaps, to develop platelets or to coagulate.

The circulatory disturbances which are believed to play an important part are those which result from (1) the sudden dilatation of a vessel, as one often sees in varix or aneurysm, or (2) the entrance of a small vein into a large one, or (3) the little pouchings naturally present in veins behind their valves. It is thought that in these situations slight irregularities of the flow of blood, little eddies perhaps, may occur—what Recklinghausen has called "Wirbelbewegungen"—and that here blood corpuscles break up into platelets and fibrin ferment is set free and clotting is started. In such a vein as the one I now hand round, where a dilatation of the size of a pullet's egg has developed in an internal saphenous vein which is not notably enlarged, we can understand that there must be a considerable departure from the regular even flow of blood in one direction—that is, the normal condition. Within this great sacculus clotting has occurred and it did not extend any distance beyond it. I excised this vein from the upper part of the leg of a woman and with an entirely satisfactory result. Cohnheim held that the full vitality of the endothelium of a vessel partly depended upon the regular and rapid flow of blood over it, and he suggested that in such cases as those which I have mentioned and in others of great enfeeblement of the circulation the natural stimulus—or whatever influence it may be—of this rapid steady blood-flow is lost, that as a result the endothelium suffers, and that from this follows some deteriorating effect upon the blood leading to its coagulation. This view is interesting as emphasising the great mutual influence and dependence of blood and blood-vessel.

There are two modifications of the circulation that I would like to draw special attention to. The first is the regurgitation from deep into superficial veins that is such a frequent, if, indeed, it is not an entirely constant, phenomenon in varicose veins. In the first of these lectures I described this phenomenon and mentioned how constant I had found it. I believe that the disturbance in the circulation it causes, he undue tension in the varices, is an important cause of thrombosis in varicose veins. I make this statement the more confidently because when I have operated in such a manner as to prevent this regurgitation (Trendelenburg's operation) I have found the tendency to thrombosis removed. I mentioned striking cases of this in my first lecture. I must not recapitulate them. There is no doubt that thrombosis is much more common in varicose veins than in others. Of course, several other explanations of this fact are forthcoming, such as the effect of the abrupt dilatation and pouching that I have already referred to, the projection of the veins exposing them to contusions and other injuries, and the degenerations or inflammations of the inner coat which occur more often in varicose than in healthy veins. But the good effects of occlusion of the highest part of the superficial vein affected seems to me to be strong evidence that the greater tension and the modification in the blood-current caused by reflux, must play an important part in leading to thrombosis. There is another well-known fact that bears upon this. I am sure that all of us have seen cases of thrombosis that we have treated *secundum artem* by rest in the horizontal position; we have been pleased to watch the arrest of the disease, the gradual lessening of the pain and swelling, and the passing away of all the unpleasant symptoms. At length the time has come when we have felt that the thrombus must be so far organised as to be firmly incorporated with the vessel wall and that the danger of embolism is past. We allow our patient to get up; the legs that have been horizontal for some weeks with low tension in all the vessels are suddenly put in the vertical position and the tension in all the vessels is raised. At once a fresh attack of thrombosis occurs. Why? From the injurious effect of an abrupt alteration (increase) of the tension in the veins. I have seen cases where this unfortunate accident has occurred time after time until many months have been spent by the patient in resting for one after another of his attacks of thrombosis. But this clinical observation is such a commonplace one that I need not detail cases to illustrate it. We all of us, I suppose, regard the period of first getting up as one full of risk for a patient with thrombosis, so frequently is it followed by a fresh clot. Negative evidence to the same effect is afforded by the good effect upon thrombosis of rest in the horizontal position. How commonly it is attended with immediate arrest of extension of the clot and of all the other symptoms. It is the lessened tension in the veins that is the chief cause, I submit, of the improvement. And here I may mention one other point. We all know that thrombosis is much more common in the lower limbs than in the upper. Why is this? Is it not mainly because the tension in the veins undergoes greater, more frequent, and more prolonged increase in the lower limbs than in the upper? The general higher vitality of the upper than the lower limbs, which is shown in so many ways, may also partly explain this difference. A striking confirmation of this view is afforded by the fact that venous thrombosis occurs more often from tricuspid regurgitation than from any other form of heart disease.

The other alteration in the circulation that I wish to refer to is that produced by a block in a main artery. It is commonly stated that when a clot forms in a vessel it exhibits a tendency to extend in the direction of the circulation. This is undoubtedly true of venous thrombi but it is not true to the same extent of arterial thrombi. Here we often see that the thrombus extends up along the artery towards the heart and it may be for some distance. I may remind you of some of the cases of obliterative arteritis I mentioned in the last lecture in which, for instance, the arterial disease with occlusion by clot extended as far as up to the popliteal artery, but the thrombus extended not only the whole length of the femoral artery but in one case the clot reached up to the aorta and even as high as the origin of the renal artery. I think it is truer to say that both in arteries and veins clots tend to grow centrally and towards the heart.

Another very important modification of the circulation is that brought about by great enfeeblement of the heart. Thrombosis undoubtedly occurs in many conditions of enfeebled circulation and Virchow especially has described these so-called marantic thrombi. But not only is there no exact relationship between the rate of blood-flow and coagulation, but recent observations have demonstrated the presence of micro-organisms in many so-called marantic thrombi and this discovery necessitates a careful reconsideration of our theories of intravascular coagulation from mere slowing of the blood-stream. Micro-organisms have been

demonstrated in thrombi in many conditions, such as puerperal thrombosis, post-enteric, post-pneumonic thrombosis, and in the clots occurring in the late stages of tuberculous disease, as well, of course, as in the more definitely septic conditions. The organisms most commonly present in such clots are streptococci, staphylococci (less often), and occasionally the bacillus coli, bacillus proteus vulgaris, and some others. Only last year Dr. J. H. Bryant read a paper at a meeting of the Pathological Society of London in which he described four cases of thrombosis where he found organisms in the clots which he regarded as the cause of the coagulation; in one case he found streptococcus and staphylococcus albus, in two cases bacillus proteus vulgaris, and in one case the bacillus subtilis in one saphena vein, and staphylococcus in the opposite saphena vein, in each case in pure culture. A great deal of attention has recently been paid to this investigation, especially by French observers, and the belief is gaining ground that micro-organisms play a great and hitherto unexpected rôle in the pathology of thrombi. It may be so. But possibly we shall take a too narrow view if, because organisms are found in clots or on the walls of plugged vessels, we at once assume that the organisms are the sole or main causes of thrombosis; indeed, I would venture to suggest that the whole discussion of the causes of thrombosis, of which I have given a very imperfect outline, is vitiated by one fallacy. The discussion is based on the assumption that a clear and sharp distinction is to be drawn between the blood and the blood-vessels. Do we not press this distinction too far? Developmentally we know that they own one common source; in the mature state their inter-relations are far more close than we readily imagine, and before we can truly appreciate the nature, causes, conditions of thrombosis I think we must grasp the idea that the blood and the inner cont of blood-vessels are parts of one organ—of one organic whole. Any grave defect of this organ may lead to thrombosis and whether the change is initiated in the fluid blood or the more stable tunica intima is not a distinction of primary importance.

Leaving these more theoretical considerations I will ask your patience while I refer to one or two of the less common forms of thrombosis. I have seen at least two cases of thrombosis of the spermatic veins. One of the patients was a man, aged 32 years, under the care of my colleague, Mr. G. Lawson, at the Middlesex Hospital. On Feb. 1st, 1894, he was kicked on the scrotum; a good deal of pain and swelling followed but he continued at his work as an asylum attendant that day. Next day he stayed in bed and his pain was better. He tried to get up on Feb. 3rd, but finding his pain worse he went back to bed and stayed there till Feb. 7th and after that he did a part of his work each day till Feb. 14th, when he was admitted to hospital because any strain or effort brought on an acute dragging pain in the left testicle. He was then found to have a firm, uneven swelling in the left cord in the upper part of the scrotum. The vas deferens could be traced over its posterior aspect, not lost in the swelling, and it seemed to be clear that this was a thrombosed spermatic vein. The patient was kept in hospital till March 5th, where he left convalescent. A year or two before this a youth, aged 18 years, was admitted to Middlesex Hospital under the care of Mr. J. W. Hulke with a swelling in the left spermatic cord. He gave no history of injury and said that he had noticed a dragging pain in the part for three or four days. In this case a firm narrow cylindrical cord could be felt extending from the top of the left testicle up to the external abdominal ring. It was clearly in the spermatic cord and quite distinct from the vas deferens, and Mr. Hulke and others who saw it were quite clear in their opinion that it was a thrombus in a vein of the spermatic plexus. The testicle was a little tender only. There was no urethritis in either of these cases. This patient, like the other, was rested in bed and left the hospital convalescent.

My colleague Mr. Henry Morris kindly allows me to mention a curious case that was under his care in the Middlesex Hospital. An unmarried woman, aged 28 years, accidentally noticed a lump of about the size of a pea in the left breast when she was feeling some pimples in the skin of the part. It gave her no trouble and she took no further notice of it. A year later, in May, 1899, she bruised the left breast and two days after on feeling the painful part noticed a lump there which she thought was the same as the one noticed before. She was seen by one of the assistant surgeons to the hospital and advised to come in. The note of her condition on admission is as follows: "A tumour of small size is situated in the outer and upper segment of the left breast towards the axilla. It is about one inch long and half an inch across, placed radially from the nipple. It is hard, smooth, somewhat lobulated; it is freely moveable. It does not fluctuate. It is felt to be in the mammary gland itself and to be over the pectoralis major. The axillary glands are neither enlarged nor hard. A large abnormal vein runs across the left axilla—a congenital abnormality." Mr. Morris operated and found the lump was a thrombosed vein in the breast. I think this must be a very rare experience and with such a history as this patient gave it would have been almost impossible to arrive at a correct diagnosis before the operation.

I have seen some cases of chronic spreading thrombosis which I think are probably closely allied to cases of arteritis obliterans and if I wanted to give a name to them I should call them *endophlebitis obliterans*. Up to the present I have only seen them in the superficial veins of the lower extremity. The patient notices a little stiffness in the leg hardly amounting to pain and on feeling the part a slightly tender "knot" is felt. The symptoms at first are not severe enough to lead the patient to rest or to consult a medical man. Slowly the "knot" lengthens into a firm cylindrical cord which can be rolled under the skin or may be fixed to it by periphlebitic œdema—it is only a little tender to the touch. Steadily this induration of the vein—for such it is—extends up the leg and I have known it reach from the ankle to the groin. The connexion of the firm cord with a subcutaneous vein can easily be demonstrated. So far as I have seen the extension of the clotting and obliteration of the vein is always in an upward direction. I saw a case last year where a very robust healthy young married man, who had rather numerous but not very large varices scattered over the right leg and thigh, was attacked with this form of thrombosis. When I saw him he had already been many weeks in bed and the clotting had been watched spreading up along the whole length of the internal saphena vein—quite up to the groin. The treatment of these cases by rest is very unsatisfactory—it may entail several months of idleness. Excision of the thrombosed vein except at its earliest stage is a rather troublesome and wholly unnecessary procedure. I have found that to excise a portion of the vein a little above the evidently diseased part effectually stops the spread of the trouble. This is a very simple procedure and it has the further advantage that it removes the danger of embolism which might conceivably occur even in these cases of chronic thrombosis. Three years ago I had a woman under my care with this affection involving the left internal saphena vein up to a little above the knee. I removed an inch of the vein four inches higher up and in 14 days she left the hospital convalescent, the disease being arrested and the pain to which it had given rise had quite passed off.

Among the cases of obliterative arteritis that I related in my last lecture was one that I was indebted to the courtesy of Dr. W. Pasteur for the opportunity of seeing and for the permission to publish. In addition to the disease in the arteries of the legs which led to gangrene in the feet there were acute abdominal symptoms during the last few days of the man's life and it was to this abdominal condition that death was at last due. The symptoms were persistent vomiting and the presence of an ill-defined tumour in the lower half of the abdomen—this was not resonant. The man died from exhaustion eight days after the onset of these symptoms. The necropsy revealed thrombosis of the superior mesenteric vein and partial obliteration of the companion artery; the mesentery and a certain length of the ileum were greatly thickened, hardened, and very dark in colour, being infiltrated with blood.

Thrombosis of the superior mesenteric vein is not a common condition; Dr. Welch has been able to find records of 32 cases; he states that the condition is commoner in the superior mesenteric vein than in the inferior and much more frequent in the mesenteric arteries than in the veins. I had an example of superior mesenteric vein thrombosis under my care two years ago and as the symptoms were exceedingly ambiguous I hope a brief summary of the case may be of interest. The patient was a carpenter, 40 years of age, who had enjoyed good health up to the time of the illness in question. This illness began 12 days before he was admitted to the hospital with languor and a sense of fulness at the epigastrium. His appetite was poor and he ate very little. Three days later (May 17th) his

bowels ceased to act, no flatus even being passed. Four days later still (the 21st) he came to the hospital out-patient department complaining of loss of appetite and constipation; he had no pain, his temperature was normal, and his pulse was 88. He was ordered sulphate of magnesia and haustus gentianæ alkalinus. After three days more (the 24th) he was seized with severe pain at the epigastrium and for this he took next morning an ounce of castor oil which he retained but which did not produce any action of the bowels. Then on the 25th he began to vomit and he suffered much from paroxysms of griping pain at the epigastrium. On the 26th, as nothing had passed from the bowels for more than a week, his medical attendant administered a glycerine, and then a soap-and-water, enema which returned unaccompanied by any motion and he was then sent into the hospital. He was then, 12 days after the onset of the illness, a well-nourished man lying flat in bed with extended legs; he seemed to have no pain; his temperature was 98° F. and his pulse was 88; his tongue was thickly coated. His abdomen was not distended; it moved freely with respiration, its walls were flaccid; no peristalsis was visible. We could not detect any swelling or elicit any tenderness; the cæcum was not full. The liver edge was felt two inches below the costal margin at the end of inspiration; liver dulness was present. Elsewhere the abdomen was resonant. There was no hernia; the rectum was empty and digital examination revealed no abnormality. The urine was acid, of specific gravity 1026, and loaded with urates; it was free from albumin and did not give the indican reaction. Soon after his admission an enema of castor oil was given, followed by soap-and-water; this was returned without any motion and soon afterwards he complained loudly of colicky pains and his pulse rose to 108 and became very feeble. Hot fomentations soothed him and in an hour his pulse was down to 80 and of good quality. The next morning (the 27th) Dr. Pasteur saw the man with me and we decided to give him calomel in one-grain doses every four hours till the bowels acted. After two doses he passed a slight motion of dark offensive liquid; he had great pain at the time and soon afterwards he vomited. But he had a comfortable night without pain and next day he took an ounce of compound senna mixture. On the 29th the bowels acted twice, the motions consisting of a small quantity of dark fluid with a little solid fæcal matter. There was now no vomiting, he was free from pain, and slept well; his pulse was 96. His abdomen was still quite soft and moved freely; there were a little tenderness and sense of resistance to the left of the umbilicus; he was passing flatus freely. But he did not have a good night and next day (May 30th) he complained of dull aching pains in both loins; there was no vomiting but also no motion; the abdomen was a little more distended, especially on the right side. At 3 P.M. he took half an ounce of castor oil and afterwards passed two motions, chiefly fluid. He vomited in the night and the acute pain returned. Dr. Kingston Fowler saw him with me on the next afternoon (May 31st) and agreed that there was no clear indication for immediate operation. We ordered morphia when the pain was severe. After this he became worse rather rapidly; the pain became very severe, vomiting returned, and his abdomen became distended and rigid and his pulse rose to 144. In my absence Mr. T. H. Kellock operated next morning, June 1st. He found a quantity of blood-stained serous fluid in the peritoneum, a long coil of the small intestine was of a dark-purple, almost black, colour, and the corresponding mesentery was thickened and firm with several hæmorrhages into it. Recognising that the condition was one not to be satisfactorily dealt with by operation Mr. Kellock at once closed the wound. The man died in the evening of the same day.

The following notes were taken at the necropsy. "Small intestine more or less gangrenous for entire length. Duodenum and upper one-third of jejunum were considerably discoloured and below this the walls were almost black. The intestine was neither distended nor collapsed. Coils slightly adherent through early inflammatory exudation. Large intestine and vermiform appendix normal. Mesentery greatly thickened, firm, and yellowish-green in colour. Veins distended with blood-clot. Tissue round veins in portal fissure much thickened and the portal vein contained clot. The chief vein of pancreas was distended and filled with clot, which, however, appeared more recent than that in mesenteric veins. No definite changes in arteries. No constriction or any other lesion to account for gangrene. Pancreas appeared rather swollen, otherwise normal. Spleen enlarged and distinctly firmer than normal."

Mesenteric thrombosis seems to be most often caused by some intestinal lesion, but in my case none was observed. The symptoms usually set in abruptly with severe pain of a spasmodic colicky kind, referred to the epigastrium; vomiting quickly follows and the abdomen becomes distended and tender. There may be absolute constipation or there may be the passage of motions containing dark altered blood. Death appears to be an invariable result and surgery offers no succour to these patients. I must confess to being entirely nonplussed by the case which I have just related; in several particulars it differed from the common course of the affection, especially in its slow, gradual onset, the length of time which it lasted, and the periods of apparent improvement in all the symptoms.

The last cases of thrombosis to which I will refer are two occurring in the innominate veins. The first was in a little girl, 10 years old, a patient under the care of Dr. S. Coupland in the Middlesex Hospital in 1894. She was admitted on Dec. 18th suffering from typhoid fever. On Feb. 11th, 1895, when convalescence seemed to be progressing well, each external jugular vein was found to be thrombosed—firm, knotty, and exquisitely tender; on the left side the swelling around the vein became very marked. A week later, Feb. 19th, the note is: "Greatly improved. Feels well and is recovering strength rapidly. Neck is excessively painful still but the inflammation is certainly subsiding. Both external jugular veins are thrombosed. Temperature 100°." On Feb. 23rd she complained of pain in the chest below the right nipple. The superficial veins over the chest, especially on the right side, were enlarged, there was pitting on pressure on both sides of the chest, and the face looked puffy. There was no œdema of the upper limbs. There were no other physical signs of chest lesion. These symptoms continued and on Feb. 28th she had dysphagia. The œdema of the chest wall was greater: that of the face had disappeared. The neck was now less tender. The superficial veins over the chest were larger and appeared to be carrying on a collateral circulation. Then signs of fluid in the left pleura were detected and on March 8th she was tapped and 24 ounces of semi-purulent and sanguineous fluid were withdrawn; this seemed to give a certain amount of relief. But the child got worse. Thus on March 12th the note runs: "Child is generally worse; there is great puffiness of left side of face; great œdema of the chest wall. Pulse 136, very weak—indeed, scarcely to be felt at the wrist." The left pleura was again tapped on March 13th and this time one and a half pints of yellowish cloudy fluid were drawn off. Under the microscope a few pus cells were seen in it, together with a large number of red corpuscles in various stages of disintegration. During the tapping the aspirator unfortunately broke down twice and air was admitted to the pleura and to the subcutaneous tissue of the chest wall. Strange to say, two days later (March 15th) this child was sitting up in bed with a normal temperature and busy with her sewing. But the fluid reaccumulated and on March 17th I opened and drained the left pleura, evacuating two pints of thin pus. For a time respiration was terribly embarrassed and oxygen and brandy were administered; in an hour she became quiet, breathing well, and was evidently relieved by the operation. The patient then for a time steadily improved; her pulse became better and stronger and we began to entertain hopes of recovery. On April 12th a trace of albumin appeared in the urine; this rapidly increased in amount and by May 4th is noted as being present in "great quantity." At the end of April dyspnœa and restless nights returned and on May 7th she was unable to lie down. There was then dulness at both bases up to the angle of the scapula. On the 9th I drew off 23 ounces of very sanguineous fluid from the left pleura; it gave immediate but partial relief and she sank and died next evening (May 10th).

The great veins at the root of the neck are preserved in the Middlesex Hospital Museum and the specimen is thus described in our catalogue: "The veins of the neck and the superior vena cava. The superior vena cava is occupied by clot which projects into the right auricle. The innominate, subclavian, and jugular veins are completely blocked by clot and converted into fibrous cords. On the left side there is considerable matting about the upper end of the jugular vein. The azygos vein is enlarged. From a girl, aged 12 years, in whom the condition ensued five months after an attack of enteric fever. Double hydrothorax was present."—(Specimen shown.)[1]

[1] Middlesex Hospital Medical Register, 1155, 1893, P.M. 105, 1894.

The second case was one that I saw four times in consultation with Dr. C. Percival White and Dr. Norris. The patient was a married lady, aged 30 years. During the seventh month of her first pregnancy accidental hæmorrhage occurred and the child was born dead on May 12th, 1900. She passed through the puerperal state quite normally. At the end of four weeks she went away to Folkestone and about a week later she developed a thrombus in the right internal saphena vein. Two months later—July 9th—she returned to London. Dr. White found her looking extremely ill, with a much higher pulse-rate than he could account for. Her temperature was 100° F.; the right saphena vein was still tender and firm. On July 16th she complained of pain in the right side of the neck. As there was an old-standing small thyroid adenoma here it was thought that this might be the cause of the trouble. But when I saw this patient again on July 19th there was no doubt whatever that clotting had occurred in the right axillary, subclavian, and external jugular veins—these could be felt as firm and very tender cords. There was marked venous congestion and œdema of the right hand and arm and the patient complained of extreme pain in these parts. The œdema of the upper limb and right side of the chest became enormous, but by the end of the month the œdema and the pain had both become less, although it was clear that the internal jugular vein was also plugged and the patient complained much of buzzing in the ears as well as of the intense pain in the arm. The right arm gradually got perfectly well. Then the same process was gone through on the left side, but the pain and the circulatory disturbance did not seem to be quite so severe. At the end of August fluid was discovered in both the pleural cavities and these were repeatedly tapped, clear serum being drawn off. The relief afforded was only transient and on Sept. 12th the patient died. The cause of the pleural effusions would appear in this case to have been venous engorgement only, due to obstruction of the azygos veins. In the former case there was evidently injection of the pleura with a pyogenic organism; it was not a hydrothorax but an empyema.

The Ingleby Lectures

ON

CHRONIC HYPERTROPHY OF THE FAUCIAL AND PHARYNGEAL LYMPHOID OR ADENOID TISSUES.

Delivered at the University, Birmingham,

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LECTURE I.

Delivered on May 27th.

MR. DEAN AND GENTLEMEN,—It is customary and very right that at the commencement of these lectures some reference should be made to keep alive the memory of him who founded and endowed them, the late Dr. Ingleby. He was born at Cheadle in Staffordshire in 1794. He was apprenticed to a medical man there for five years. He then went to the London and Edinburgh medical schools and came to Birmingham in May, 1816, being appointed surgeon to the General Dispensary in August of that year. In 1828 he became lecturer on midwifery in the School of Medicine and not a little of the reputation of Queen's College was due to him. He acquired a very extensive and important practice and as an obstetric practitioner he stood alone in the provinces. His opinion was sought by patients from London and all parts of the kingdom. As an author in midwifery he was without a rival and he gained a European reputation by his work on obstetric medicine. He also wrote a book on Uterine Hæmorrhage and published a course of clinical lectures in THE LANCET. As a lecturer he had no pretensions to eloquence or to fluency; he never talked learnedly but used good Saxon words with taste and precision, his *forte* being description and detail. He was a man of no display and in consultation was unassuming almost to a fault, careful to a degree not to place a practitioner in any difficulty. He was never heard to speak with discourtesy or disparagement of any fellow practitioner. In private life he was singularly amiable and gentle and was never known to be angry, although he was remarkably nervous and excitable. A case of unusual severity would spoil both his slumbers and his appetite. He suffered nothing to interfere with his practice and he pursued it with the enthusiasm and fate of a martyr. He laboured not wisely but too well and slowly but certainly his health gave way under the pressure of habitual fatigue. Nothing, however, would induce him to take even a temporary rest and not until the mischief was beyond a remedy did he see how fatally he had trifled with his life. For six weeks prior to his death he suffered from occasional attacks of atonic gout, clearly the consequence of his extreme abstemiousness and over-toil. He was again advised to rest, to take more nourishment, and to undergo a course of treatment. This advice, though consistent with his own opinion, was utterly disregarded. In this condition a feverish cold further depressed his vitality and an attack of pleuritis followed on the 24th of January, for which he was bled, leeched, blistered, and purged. The inflammation ran on to effusion, when its severity subsided, leaving its subject in an exhausted, dying state. A slight rally was followed by an attack of meningitis and by death on the 28th of January, 1845. Thus perished prematurely, at the age of 50 years, one of the brightest ornaments of our profession and one of the most amiable, useful, and esteemed members of society—a victim to an undue devotion to study and to the duties of his immense practice. This brief outline of his life and death conveys to us both an example and a warning—so plain that he who runs may read. Could he but speak to us from the land of the beyond the warning would be his theme. I pray you to give heed to the example.

In accordance with the wishes of the founder I purpose to speak of conditions peculiar, at all events to a great extent, to childhood—viz., Hypertrophy of the Faucial and Pharyngeal Lymphoid or Adenoid Tissues. I have selected this subject as being one of great interest to those engaged in the general work of our profession and as one upon which I am able to speak with some authority. Although I have not much that is new to bring before you at the present time I feel there is much that needs saying upon the subject.

The structure of these lymphoid tissues consists of a network of loose connective tissue in the meshwork of which are lymphatic follicles and also, according to Sajous, some conglomerate glands. They are covered with cylindrical epithelium and are richly supplied with blood-vessels. They occur as distinct and well-defined rounded masses between the anterior and posterior pillars of the pharynx—the faucial tonsils—as an irregular layer across the upper part of the posterior wall and vault of the naso-pharynx—Luschka's tonsil—and as scattered patches over the posterior and lateral walls of the pharynx, sometimes in the latter situation extending downwards as distinct bands from Luschka's tonsil, behind the posterior pillars of the pharynx. There are also two patches at the base of the tongue in the glosso-epiglottidean fossæ known as the lingual tonsils but which are outside the scope of these lectures. These tissues during inflammatory catarrhal attacks increase in size and are also very prone under certain conditions to overgrowth or hypertrophy—and it is this latter condition alone as distinct from the former that I purpose to speak about.

The faucial tonsils when hypertrophied are generally spoken of as "enlarged tonsils." Hypertrophy of Luschka's tonsil has gone by many names: "adenoid vegetations in the naso-pharynx," "adenoid growths," "post-nasal growths" (or "growths" for short), "post-nasal adenoids," and now "adenoids." This last is a short and convenient name, and so long as the true nature of the condition is kept in mind there can be no valid objection to its general use. "Enlarged tonsils and adenoids" is now a common way of denoting this hypertrophy of the two groups of tonsils. Hypertrophy of the scattered patches and lateral bands in the pharynx is usually termed "chronic follicular or granular pharyngitis." It may be said that there is practical agreement that enlarged "tonsils and adenoids" are usually associated, that they occur essentially in childhood and adolescence, and that they are almost equally prevalent in the two sexes. Considerable diversity of opinion, however, exists as to the influence or importance of most of the assigned causes—viz., heredity, scrofula, lymphatic temperament, climate, anterior nasal stenosis, cleft palate,

vaginal secretions at birth, the acute exanthemata, whooping-cough, and nasal and naso-pharyngeal catarrh. Heredity (including both the transmission of a special tendency to this hypertrophy, of which some well-marked instances have come under my notice, and the liability of children with a tuberculous family history to lymphatic affections) is certainly a cause, and that it may be the only one is shown by the occasional manifestation of the symptoms from the time of birth. Climate is undoubtedly a most important factor. The atmosphere in large cities and for miles around is laden, more or less, with irritating ingredients—particles of carbon, acrid fumes, &c.—and the constant passage of these impurities over these tissues so sensitive to stimulation is sufficient in itself to produce over-growth. Add to this a winter climate—though the word "winter" might almost be omitted—of rapid alternations of temperature, periods of cold winds, wet, fog, and gloom, with only occasional intervals of dryness and sunshine, and you have ideal conditions for the production of acute catarrhal inflammations—rhinitis, adenoiditis, and tonsillitis. Let only these attacks be repeated, or, above all, neglected, as is so often the case with the masses, and you soon have a chronic tonsillitis and adenoiditis with the inevitable hypertrophy as a sequel. A cold, moist climate, clay subsoil, &c., is a sufficiently exciting cause altogether apart from the effect of the vitiated air of large towns. Measles, scarlet fever, whooping-cough, and influenza are active exciting causes, the first symptoms often dating from one of these illnesses. Anterior nasal stenosis is considered by some authorities to be a predisposing and even an exciting cause of adenoids, but a careful examination of a very large number of children with adenoids sufficient to cause almost complete nasal stenosis has shown the nasal fossæ to be generally patent, and only stenosed anteriorly in cases where catarrh has been present as well. In fact, my observations have led me to the conclusion that anterior stenosis from turbinate congestion, &c., is either concurrent with an adenoiditis or a result rather than a cause of the hypertrophy. Deflections of the septum sufficient to cause anything like complete stenosis are very rare in children. To sum up, heredity, bad climate, bad hygiene, bad feeding, and neglected colds will account for the majority of cases.

The age at which the hypertrophy takes place, or rather causes symptoms requiring treatment, is shown by the following table of 1000 cases operated upon by me at the Birmingham Ear and Throat Hospital from Jan. 1st, 1899, to Jan. 15th, 1902—a little over three years. Of the 1000 cases 556 of the patients were females and 444 were males, and 816 were under and 184 were over 16 years of age. The youngest patient was 14 weeks old and the oldest was 36 years old.

Table of 1000 Cases of Hypertrophy Operated upon at the Birmingham Ear and Throat Hospital between Jan. 1st, 1899, and Jan. 15th, 1902.

Age.	Number.	Age.	Number.
In the first year	9	In the eleventh year ...	37
,, second year	17	,, twelfth year... ...	57
,, third year	48	,, thirteenth year ...	49
,, fourth year	74	,, fourteenth year ...	41
,, fifth year	105	,, fifteenth year ...	34
,, sixth year	78	,, sixteenth year ...	39
,, seventh year... ...	71		816
,, eighth year	56		
,, ninth year	51	Over 16 years of age ...	184
,, tenth year	53		1000

An analysis of the 816 cases among patients under 16 years of age shows that the greatest number were in their fifth year, those in their sixth, fourth, and seventh years ranking next. Considerably over one-third, therefore, of the 816 cases occurred in these four years.

Although in children enlarged tonsils are nearly always associated with adenoids it will be most convenient to consider the special characteristics, symptoms, and treatment of each separately.

The clinical importance of enlarged tonsils has been recognised for a great number of years, but symptoms were assigned to them which were in reality due to adenoids—then unknown. Consequently, tonsillotomy often failed to give more than partial relief and became to some extent discredited. Disappointed parents attributed to the operation the poor development of the thorax, the sexual organs, and mammæ in girls, and the tradition still lingers. An occasional protest against removal of the tonsils is still made on these grounds.

In size, shape, and consistence enlarged tonsils vary much, but they may be arranged in three groups: (1) where the hypertrophy is chiefly in the horizontal diameter—the projecting tonsil; (2) where the hypertrophy is chiefly in the vertical diameter—the elongated tonsil; and (3) where the hypertrophy is chiefly in the antero-posterior diameter—the broad sessile or flat tonsil. These types may, and often do, approach each other and are found in combination with one another, the most frequent being the elongated with the projecting. This occasionally has in exaggerated forms the appearance of a double tonsil. This is probably due to the persistence of the lower of the two furrows which, according to Killian,[1] are present at birth. Persistence of the upper furrow is more common and without careful examination its circular edge might be mistaken for the edge of an excavated ulcer.[2] The surface of the tonsils may be even and of a fairly normal aspect or ragged with large and irregular openings into the crypts. Very rarely it is papillated, as in these two tonsils removed from a girl, aged five years, where the surface is covered with projecting papillæ, some half an inch long, and presents an appearance that might be mistaken for multiple papillomata. The consistence may be normal, dense and fibrous, or soft and mushy, according to the predominance of the fibrous or lymphoid tissues. The older the patient the more fibrous the tissues, as a rule, but much depends on the occurrence and length of chronic inflammatory attacks. The secretion from the follicles may be caseating and retained in the crypts and recesses of the tonsils. The pillars of the fauces may from previous inflammatory attacks be more or less adherent and in marked cases almost blended with the tonsils, especially in the sessile variety.

The symptoms caused by enlarged tonsils may be classified as (1) obstructive, (2) catarrhal, and (3) reflex.

1. *Obstructive symptoms.*—The size alone of the tonsils may cause considerable mechanical trouble. Swallowing when the projecting tonsils are in apposition is rendered difficult—a special effort has to be made by the child to get the food out of his mouth and in extreme cases fluid only can be swallowed and that with difficulty. Under similar conditions buccal respiration is much impeded (a serious matter if nasal stenosis from adenoids coexists) and the voice is thick and indistinct. In some cases the palate is pressed upwards to such an extent that the action of the palato-tubal muscles is impeded and deafness results from imperfect middle-ear aeration.

2. *Catarrhal symptoms.*—The crypts and recesses, especially in those forms where lymphoid tissue predominates, are suitable places for the lodgment of the catarrh microbe—the pneumococcus and other micrococci akin to it—and form "centres" for catarrhal attacks. The microbe, probably ever present, waits only for some diminution of tissue resistance, such as an exposure to cold will produce, to exert its maleficence. The catarrh may either keep localised, causing tonsillitis and exaggerating or producing obstruction, or in those of less resisting power may extend to adenoids, if present, causing adenoiditis, and from there to the middle-ear or to the nasal cavities or downwards to the organs of respiration and digestion, according to the constitutional peculiarity or tendency of the individual. Owing to absorption of toxin generated by the catarrh microbe or the passage of the microbe itself through the lymphatics, the lymphatic glands corresponding to the tonsils (the upper set of the deep cervical group) often become inflamed and enlarged. In the slighter cases the glands enlarge during catarrhal attacks and subside with the disappearance of the catarrh. In others the glands do not disappear on the subsidence of the catarrh but remain distinctly enlarged and become larger and tender on pressure during every subsequent catarrhal attack but with little or no tendency to break down or to suppurate. In the more severe cases there is from the first a decided tendency for the glands to break down and to suppurate. This variation is due to the difference in the resisting power of the individual and the intensity and amount of the toxin absorbed. Tonsillotomy prevents these attacks and if promptly done at the outset may arrest the progress towards suppuration. Glands, too, that have been enlarged for a considerable length of time often gradually diminish in size and disappear after tonsillotomy. The two following cases illustrate this and the possible arrest of suppuration.

[1] Archiv für Laryngologie, vol. vii.
[2] Dundas Grant: Brit. Med. Jour., vol. ii., 1901.

CASE 1.—The patient, a boy, aged 14 years, with a good family history, was seen on Nov. 5th, 1900, for enlargement of the right upper cervical glands of some years' duration, one of them being of the size of a small hen's egg, painless, but becoming larger during colds and tender to pressure. Treatment had been of no avail and tonsillotomy had been done at Cape Town. The right tonsil was, however, very large, with a ragged surface, the adenoids were in a similar condition, and patches of hypertrophied lymphoid tissue were scattered over the pharynx. Right tonsillotomy and removal of adenoids was advised and performed, and after recovery from the operation the pharyngeal patches were cauterised. This was followed by gradual diminution of the glands and the patient's mother reported on Feb. 17th, 1902, that they had completely disappeared.

This is an extreme case and it was a question at the time of operation if the glands should not then be excised but the mother wished to await the result of the simpler procedure and was much gratified at the result.

CASE 2.—A healthy child, aged six years, living in the country, was seen on Nov. 22nd, 1900, for enlargement of the left upper cervical and parotid sets of glands—a sequel of a cold contracted a fortnight previously. Twelve months ago a similar condition happened on the right side and was followed by suppuration of the glands necessitating incisions. On the right the scars were well marked and one was adherent to a hard nodular gland. On the left side a mass of glands, tender when touched, formed a prominent swelling below the left ear and the angle of the jaw. Both the tonsils and adenoids were large and soft but were not inflamed. As no fluctuation could be detected a hope was held out that suppuration might be prevented by immediate tonsillotomy and curetting of the adenoids. This was done and in a few days there was a marked diminution in the swelling and in a fortnight it had practically disappeared, though a few of the glands remained slightly enlarged for a few months. The child was seen again a year later for a reopening of the scar over the nodular gland on the right side, but the left side remained perfectly well.

These enlarged glands have been, and, indeed, are now, often termed tuberculous, greatly to the alarm of the parents. That they are not tuberculous is probable by the absence of extension to neighbouring glands, by the absence of systemic infection, and most of all by the satisfactory result—in the great majority of cases—of treatment directed to the tonsils. I wish particularly to impress upon you that in these cases it is the tonsils and not the glands which need treatment.

3. *Reflex symptoms.*—The only reflex symptom that I have been able to attribute to enlarged tonsils is "cough." This may be short, dry, or hacking in character and almost constant, or occurring in paroxysms and distinctly spasmodic in character. It is difficult when "adenoids" are also present to say to which group the credit of the reflex should be given, but every now and then cases occur—such as the following—which seem to point definitely to the tonsils as a cause.

CASE 3.—A boy, aged six and three-quarter years, was sent to me by Dr. Alexander Bryce on Sept. 7th, 1900. The chief symptom complained of was "cough" which was frequent, croupy in character, and not benefited by treatment. The breathing was noisy at night. The tonsils—the left one especially—were enlarged and the surface of both was ragged. There were slight adenoids. I endorsed Dr. Bryce's opinion that the tonsil condition was the cause of the cough and a few days later did tonsillotomy and curettement of adenoids, completely curing it.

CASE 4.—A boy, aged five years, was sent to me by Dr. Tildesley on Sept. 18th, 1900, for constant hacking cough, worse at night and causing restlessness and disturbing sleep. There was no thoracic cause or nasal obstruction or deafness. Both tonsils were enlarged and were soft in consistence and there were slight adenoids. Tonsillotomy and curetting of adenoids was done on the following day and the cough rapidly got well.

The diagnosis is simple. The possibility of tonsillitis accounting for the whole or part of the symptoms must be kept in mind; the presence of febrile symptoms and the inflamed aspect of the tonsils will clear up this point. A thorough examination should in all cases be made, the surface and condition often being of more importance than the actual size. When the examination has been completed (which should include the buccal cavity, pharynx, naso-pharynx, nose, ears, and lymphatic glands) the tongue depressor should be pressed backwards until the child retches; this brings the tonsils into relief and, especially in the flat forms, shows their full extent and condition.

The treatment resolves itself into the question of operation or not. The fact that the tonsils project a little more than is usual does not render tonsillotomy either necessary or advisable. It should be undertaken solely for the relief of some definite symptom or symptoms which cannot be satisfactorily treated by other means.

I consider operative treatment necessary when the tonsils are so large that they mechanically cause some obstructive symptom, even if otherwise healthy—when they are the centres for frequent or prolonged catarrhal attacks or acute inflammatory attacks; when they are the cause of lymphadenitis; when the crypts and recesses are filled with caseating secretion which does not yield to treatment; when they are the probable cause of a troublesome reflex cough. I consider it advisable when an adenoid operation is necessary even if the hypertrophy is not very marked.

The operation of tonsillotomy in children is now seldom performed except under an anæsthetic and in conjunction with an adenoid operation. The question of the anæsthetic, therefore, will be dealt with when the latter question is considered. Tonsillotomy alone may, however, be necessary in older children. Then local anæsthesia induced by applying a 10 per cent. solution of cocaine or eucaine is all that is needed, but if the child is nervous and sensitive nitrous oxide gas may be employed and will give ample time.

Various methods have been devised for the removal of the enlarged tonsils—a blunt-pointed bistoury and vulsellum forceps were used in early times and are still by some surgeons. The operator stands in front of the patient, seizes the left tonsil with the vulsellum forceps which are held in the left hand, and draws it towards the middle line and removes as much tonsil as possible by cutting upwards with the bistoury. If the surgeon is ambidextrous the right tonsil may be removed in a similar manner, the forceps now being held in the right hand; but if not ambidextrous it will be necessary for him to stand behind the patient. For a tractable child with projecting tonsils this method may be satisfactory, but the combination is not a common one and doubtless it was to overcome this difficulty that guillotines were invented. The earliest forms were very ingenious and consisted of a concealed ring knife and a transfixing spear, so attached that the tonsil was levered inwards whilst the ring knife cut through it. I am under the impression that the credit of this inception should be given to a French surgeon named Matthieu. His name is still associated with the instrument, although there have been many modifications with many names attached to them—Luer, Beehag, &c. To the late Sir Morell Mackenzie we owe the introduction of the spade guillotine and this type, though modified in many ways, and not always to the improvement of the instrument, has nearly displaced the French one. It is simple in construction and can be used with the patient in any position and with or without light. If properly used no difficulty will be found in removing the greater part even of the flat forms of tonsils. In my own practice I always use Mackenzie's pattern, from five to six inches in length, and with a well-balanced metal handle. The method of using it is all important. If the patient is in the sitting posture the head must be steadied by an assistant who must make steady pressure just beneath and behind the angle of the lower maxilla at the time of the removal of the tonsil. The operator should stand in front of the patient for the removal of the left tonsil, to the right and slightly behind for the removal of the right tonsil, unless he is ambidextrous or has a reversible handle to the guillotine. The guillotine should be warmed by dipping it in hot water. The first step is the proper engagement of the tonsil and here care must be taken to first encircle the lower edge. The second step is to press firmly the guillotine outwards and the third to press sharply home the blade with the thumb. These movements though distinct should be performed almost as one—steadily but rapidly.

The causes of inefficient removal or failure are due generally to a non-recognition of the first two movements and to the use of too large a guillotine, or more rarely to adhesions between the tonsils and the pillars of the fauces preventing proper engagement with the guillotine. When this latter is the case it is sometimes necessary to separate the adhesions prior to tonsillotomy. After removal the severed tonsil generally adheres to the guillotine and very seldom gives trouble by falling into the patient's pharynx,

even in the lying down position. If the patient is in this latter position both tonsils can be removed by the operator standing on the right side or behind the head for the removal of the right tonsil if he prefer. If the patient is under an anæsthetic a gag must be used and it may be necessary to change it to the other side of the mouth after the removal of the first tonsil. If, however, it is carefully placed and managed by an anæsthetist who has had experience in these cases the change is seldom required. In a combined tonsil and adenoid operation the question arises which should be first removed. This depends upon the size of the tonsils; if these are so large that they would interfere with the free exit of the curette or other instrument with the adenoids they must be operated upon first, but if not it is better first to remove the adenoids.

After the operation no portion of tonsil should be seen projecting beyond the pillars of the fauces—preferably there should be a distinct hollow. Removal of a superficial slice is not enough; the greater part of the enlarged tonsil must be removed, a small pad only being left. It has happened to me on three or four occasions to enucleate completely a tonsil with the guillotine, the blade—probably not over-sharp—slipping over a convex surface not so embedded as usual. I have not known of any detriment following this, such as lodgment of particles of food in the hollow left, injury to the internal carotid by a sharp fish or other bone caught between the pillars of the fauces, or undue approximation of the pillars of the fauces. These are possible consequences and to obviate them a small pad of tonsil tissue should be left.

Other methods of operation—viz., with tonsil scissors, the cold wire snare, the écraseur, the galvano-cautery snare, morcellement, and crushing—may be occasionally advisable in adults, but as yet I have not found it necessary to adopt any of them in children. In a few cases in older children I have, when tonsillotomy has been much dreaded by anxious parents, employed ignipuncture with the galvano-cautery. A straight point is used and inserted into the substance of the tonsils, previously well cocained, at a bright red heat. It is not advisable to make more than two punctures at one sitting and usually three or four in all will suffice to achieve the desired result.

The risks of a well-performed tonsillotomy are practically *nil*. It is impossible to wound the internal carotid artery either with a guillotine or with a blunt pointed bistoury if ordinary care be used (a sharp-pointed one should never be used). The immediate hæmorrhage is at times free, especially if the whole of the tonsil is by any chance enucleated, but it generally ceases of itself, and I have never yet had occasion to tie a vessel or ever had any anxiety about it. Recurrent hæmorrhage—that is to say, hæmorrhage occurring within the first 24 hours after operation—is more serious; a large quantity of blood may be swallowed before the patient or the nurse is cognisant of it; in one or two instances I have known it continue to syncope before medical assistance could be obtained.

The first step in the treatment is to ascertain exactly the origin of the hæmorrhage, whether it is from a single vessel, in one or both tonsils, or a general oozing from one or both. If the former a pair of Spencer Wells forceps should be clamped on and left *in situ*, but I have never had occasion to do this in the case of children. If caused by a general oozing the bleeding surface should be well swabbed with adrenalin solution and chloride of calcium in from 5 to 10 grain doses, according to the age of the patient, should be given every hour until the bleeding stops. If the application of adrenalin does not suffice firm pressure should be made over the bleeding stump with a pad of lint, with or without adrenalin, and kept in position either by the finger or a pair of forceps, but I rely much on the calcium chloride. In one case where there was a distinct hæmophilic history I gave it for some days prior to the operation with a very satisfactory result and I now frequently give it to adults beforehand as a precautionary measure.

True secondary hæmorrhage is rare but it does occasionally take place even as late as the sixth day from the opening up of a small vessel during the separation of a slough. The following cases are illustrative of recurring and secondary hæmorrhage.

CASE 5.—The patient, a boy, aged 11 years, was operated upon at home on Sept. 8th, 1896, at 9.15 A.M., for much enlarged tonsils causing obstructive symptoms and for slight adenoids. Dr. G. Elkington and Dr. H. S. Wilson were associated with me in the case. Chloroform was given by the open method. There was less bleeding than usual at the time of operation although there was a predominance of fibrous tissue in the tonsil structure. The patient was carried back to bed and was kept very quiet all day. About 8 P.M., almost 11 hours after the operation, he commenced to swallow somewhat frequently and at 8.30 P.M. Dr. Wilson saw that blood was coming from the tonsils and applied a concentrated solution of tannin. This, however, did not prove effectual, as about 11 P.M. he vomited a large quantity of almost pure blood, certainly not less than two pints. A solution of perchloride of iron was now applied and the bleeding apparently ceased, the boy being blanched and almost in a state of syncope. I was sent for, but when I saw him at 2.30 A.M. the bleeding had ceased, the tonsils being coated with blood-clot and iron. The pulse-rate was 150 and barely countable. I remained in the house the rest of the night in case of need but there was no return of the hæmorrhage. His pulse-rate 24 hours later had fallen to 85 and he made a slow but good recovery.

CASE 6.—A boy, aged 14 years, overgrown and very stout and flabby-tissued, came to me on Nov. 9th, 1900, for removal of adenoids and enlarged tonsils, which were causing marked nasal obstruction and catarrhal trouble. The operation was performed in a private hospital. The bleeding was profuse at the time of the operation but soon ceased. He was carried carefully back to bed and his throat again examined but there was no sign of hæmorrhage. Some two hours later, however, profuse hæmorrhage set in; the blood was swallowed and vomited and a good deal came freely through the mouth and nose. I was summoned and found him blanched, almost pulseless, with sighing respiration, and still bleeding; this I found to be a general oozing from the tonsils. Suprarenal liquid with chloretone was thoroughly applied to the oozing surface, 10 grains of chloride of calcium were given every hour, and a saline enema was slowly administered. Bleeding soon ceased and did not recur and the boy made a good recovery. Had I to operate on a similar tissued boy I should now certainly give him a preliminary course of calcium chloride.

CASE 7.—A delicate girl, aged 11 years, was operated upon at home on Sept. 5th, 1900, in coöperation with Dr. F. W. Underhill, for enlarged tonsils and adenoids, causing right suppurative otitis media, cervical adenitis, and frequent catarrhal attacks. Nothing unusual occurred at the time of the operation, but Dr. Underhill noticed that subsequently the tonsil surface was more sloughy than was that of her brother who was operated upon at the same time. On the sixth day after the operation, as the weather was warm and sunny, the patient was out in the garden, running about, I expect, when she felt ill and faint. She came in and vomited a large quantity of blood; she was put to bed at once but vomiting and spitting out of blood continued. Messengers were sent for medical assistance and I was summoned. Before anyone arrived the child had bled to syncope and the hæmorrhage had ceased. I found her lying pallid and almost exsanguine. On examination a firm, adherent blood-clot was seen over the surface of the right tonsil and this I did not deem it advisable to remove. I ordered calcium chloride and made arrangements to be available in case of recurrence. Fortunately this did not happen and she made a good recovery, though for some time she was very anæmic. The hæmorrhage was clearly due to the separation of a slough opening up a small vessel.

Another risk, also a small one, is sepsis, with its probable complication septic pneumonia. It is impossible to sterilise the patient's throat prior to operation but possible sources of infection, such as carious teeth, alveolar abscess, &c., should be looked for and removed. Instruments can be and should be sterilised and the surgeon's hands rendered as aseptic as possible. Sponges, if used, should receive the most careful cleansing and sterilising; personally, I never use them but employ a swab of cotton lint wrung out of hot water for what mopping out is needed.

The patient's condition at the time of operation is also important. The operation is one of election and a time should be chosen when the patient is well and free from any febrile condition—when his tissues are in a fairly good state of resistance. The better his resisting powers the smaller the risk of sepsis. It need hardly be said, too, that the patient should be placed in the best hygienic surroundings that his circumstances will admit.

The treatment after operation is simple. The essentials are: (1) avoidance of exertion immediately afterwards (a fertile cause of recurrent hæmorrhage); (2) an equable temperature during the healing process (to prevent catarrhal attacks); (3) suitable diet; and (4) the use of a cleansing

wash. The operation should therefore be performed at home or in a hospital and the child should be put straight to bed afterwards in a warm room and kept there for at least three days and indoors the rest of the week unless the weather is exceptionally warm. Nothing hot or hard should be given; the first day sterilised milk only—cold or lukewarm; slop diet the next two days; then if the child is doing well ordinary light diet. If the throat is very painful when swallowing one-twelfth of a grain of cocaine lozenge may be given before meals or the throat may be sprayed with a weak cocaine solution, but this is seldom needed. After food the mouth and throat should be washed out or sprayed with an alkaline antiseptic solution.

Should sepsis happen an examination will show the stumps of the tonsils covered with an ashy grey slough. The parts which surround the palate, uvula, and pillars of the fauces will be red, swollen, and flecked with whitish patches, the tongue will be furred, and the breath offensive, the cervical glands will be painful and enlarged, the throat will be painful, especially on movements of deglutition, febrile symptoms will be marked, and possibly ushered in with a slight rigor. When this happens a full dose of calomel should be given at once and after its action quinine or perchloride of iron. If the child is old enough and able to gargle the mouth and throat should be frequently washed out with an alkaline antiseptic wash, such as borax, chlorate of potash and thymol, or with solution of chlorine. If the child is unable to gargle the throat should be frequently sprayed with a similar solution and iodoform or one of its odourless substitutes insufflated over the sloughy surface. The strength of the child must be maintained by good nursing and feeding and a careful watch should be kept for any lung or other complications. A sloughy surface is often present in delicate children but without any spreading inflammation or febrile symptoms, and it clears gradually without special treatment as the healing progresses, and can hardly be called septic. Whenever sloughing occurs there is the possibility of secondary hæmorrhage during the separation process.

In the slighter cases where operation is not needed, and in the few that for some reason or other operation is inadvisable, local and constitutional treatment should be instituted; cleansing gargles or sprays should be used, followed by the application of astringents, glycerine and tannic acid, hydrastis, &c., and iodine and iron, cod-liver oil, malt, and hypophosphites should be given internally. A long stay at the seaside or in the country often brings about a remarkable change for the better.

[A number of illustrative specimens and instruments were shown at the end of the lecture.]

CONCERNING INJURIOUS CONSTITUENTS IN WHISKY AND THEIR RELATION TO FLAVOUR.

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SOME 18 months ago in these columns[1] we drew attention to the physiological action of furfural, a universal constituent of both raw and matured pot-still whisky, and also to the apparently different physiological effects of whisky containing and freed from aldehydes. Since then the successful application on the large scale of a method, indicated in our last communication, for removing the aldehydes from whisky during distillation has brought this subject prominently before pharmacologists and chemists. We therefore think that it will be not without interest to enter somewhat more fully into the probable effects of removing the aldehydes and the higher alcohols from whisky than was possible in our last article. More especially is this the case since it must now be regarded as established that *at least some* of the raw and offensive smell and taste of freshly distilled whisky are due to its aldehydes. The knowledge of this fact is directly due to our original investigations, and although these were initiated from a purely pharmacological standpoint, this by-result—viz., the effect upon the flavour of raw whisky of the removal of the aldehydes—is likely to be of practical importance.

As is well known, the whisky that is generally sold to-day is blended whisky—that is, a mixture of spirits of various kinds. Blending consists essentially of mixing whisky derived entirely from malt and made in a pot-still, often of very varying age, with so-called silent spirit, or spirit obtained by the fermentation of various materials and the distillation of the subsequent wort, this latter usually being accomplished in a Coffey-still—i.e., in a still provided with a rectifying column. Silent spirit is cheaper than pure malt whisky not only on account of the materials from which the former is produced but also because it requires less maturing.[2] Whisky, on the other hand, derived from malt and made in a pot-still is when raw a very nauseating and foul-smelling liquid. Upon being kept in wood for varying periods of time it becomes changed in character, the irritating smell and disagreeable taste disappearing and the spirit assuming, according to its original properties, a more or less marked bouquet. By suitably blending these two varieties of whisky the trade are able to produce a drinkable article at a relatively cheap price. The alcohol percentage is rendered more or less constant by dilution with water and the colour of the liquid is brought up to a uniform artificial tint by means of caramel or some other suitable agent.

From this very superficial sketch it will be evident that whisky can only very rarely be strictly termed pure, consisting, as it does, of a drink the basis of which is generally pure whisky, this latter being artificially doctored to suit the public taste and the distiller's pocket. It is essential to bear this in mind because an improvement by chemical means of the manufacture of whisky is apt on account of its title to create prejudice; this should not be so since subsequently to fermentation the whole manufacture of whisky, whether in pot-still or in Coffey-still, is essentially a chemical process, and if the chemistry of it cannot at the present time be followed step by step it is due in no small degree to the fact that the employés in distilleries are neither chemists themselves nor are they in the majority of cases even directed by chemists. When chemical knowledge has eventually permeated into the distilleries in the Highlands then we shall certainly know more of the minute chemistry of whisky than we do now.

In its essentially chemical character whisky differs at once from wine: a wine can go on "living" long after it is laid in the winebin, can live and change even up to the time it is poured into its penultimate resting-place—the wineglass of the consumer. In the ageing of wine we have biological and chemical processes to consider, in the maturing of whisky chemical and chemico-physical ones. Wine-producers have never hesitated to utilise all that physics, chemistry, and biology can do for them; champagne is frozen and wines are pasteurised and, if need be, sugared or plastered; the manufacture of whisky stands still, and distillers exorcising any improved method with the epithet "doctor" view with mistrust any technique other than the one adopted by their forefathers.

There are, however, other reasons more cogent than the above why any process for the improved manufacture of whisky should be welcomed by pharmacologists and, indeed, hygienists. It has been pointed out on many occasions that whisky is by no means free from injurious constituents other than alcohol. It is also true that whisky is not simply alcohol but differs very considerably from it, at least in taste. Whether it differs also pharmacologically is not so clear. There is no doubt that wines influence digestion according to their acidity, bouquet, &c., but this has not been shown with regard to whisky.[3] That the effect of whisky upon the

[1] THE LANCET, Dec. 8th, 1900, p. 1643.

[2] The amount of maturation required by silent spirit before it is fit for blending varies. The rectifying column is theoretically supposed to keep back from the distillate all substances boiling above 79° C. As the whole operation is conducted under considerable pressure this theoretical result is not always accurately attained. The usual rectifying apparatus seems to be more efficient in removing higher alcohols, &c., than in getting rid of some of the lower boiling-point impurities; thus acetic aldehyde can generally be detected in patent-still spirit but furfural with its boiling point of 162° is most rarely if ever present.

[3] Chittenden and his collaborators have made many experiments upon this subject. Their earlier experiments were made upon digestions *in vitro* and showed that, in so far as whisky was concerned, the only instance in which it differed materially from ethylic alcohol was in its influence upon pancreatic digestion. Here it exerted a marked inhibitive action, much greater than that produced by ethylic alcohol

system is simply that of its ethyl alcoholic content is perhaps not strictly true, though there is very considerable physiological evidence in favour of this thesis. Be this as it may, we all prefer, at least all whisky-drinkers, whisky to correspondingly diluted ethylic alcohol. The difference between the two is essentially one of so called by-products. It is also to the class of by-products that the injurious constituents of whisky belong. It is true that these substances are present in very small quantities. Our information, however, upon this point is largely derived from German sources. In Germany pot-stills are practically non-existent, and it is to whisky produced in these stills that our remarks especially refer.

That whisky does contain injurious substances other than ethylic alcohol is shown by the sudden death of an employé in a West of England distillery. This unfortunate man died suddenly after imbibing a quantity of "feints." A post-mortem examination revealed the fact that his stomach contents had a similar odour to amyl nitrite. Although there was no evidence of the chronic effects of alcohol upon the liver, &c., there was evidence of acute irritant poisoning. The medical man who reported the case inferred that death was probably due to amylic alcohol.[4] A sensation of throbbing and headache was recently experienced by one of the authors of this paper and others upon inhaling the vapour arising from the low-wines and feints in a pure malt whisky distillery.

If, then, certain of the by-products of whisky are injurious to the consumer the question naturally arises, Are these individual by-products necessary? If this question be answered in the negative the conclusion which must be drawn is that whisky would be much better without them. This matter is of further interest in that at least one of the assumed effects of maturation is to diminish the amount of these substances present. From this it follows that any improved method for the manufacture of whisky which prevents the formation of these substances or at least keeps them out of the finished product performs one of the functions of maturation. At the present time there is, however, some difference of opinion as to to what class of chemical substances the injurious constituents of whisky belong and as to the precise relation between them and those substances which give to whisky its characteristic and agreeable flavour. Many observers have shown that iso-amylic alcohol, the main constituent of the so-called fusel oil, is much more poisonous than ordinary ethylic alcohol. Analytical results, although discrepant,[5] point to the conclusion that the quantity of fusel oil in matured spirit is considerably less than that in the raw substance. Coincidently with this diminution in fusel oil during maturation the flavour of the whisky improves. The taste of fusel oil itself when suitably diluted is not, however, unpleasant and this substance is actually used for the purpose of giving a whisky taste to silent spirit. The amount of fusel oil calculated as amylic alcohol present in whisky, whether raw or matured, is practically always under 0·1 per cent., and it thus follows that although these higher alcohols are much more poisonous than ethylic alcohol, yet nevertheless in the quantities present they would under ordinary circumstances hardly affect to an appreciable degree the action of the spirit.[6] However, if they are not necessary whisky is better without them.

Acting upon the above assumption many attempts have been made to remove fusel oil from raw whisky. It is to be noted that these attempts have all been directed specifically to the fusel oil itself, although it is more than probable that certain other constituents to be considered below though not aimed at have been affected by these processes. The *rationale* of certainly the earlier of these processes has been to obtain rapidly that oxidation which is supposed, upon not very certain grounds, to take place gradually during so-called "natural" maturation. This artificial oxidation has been brought about by very varying methods, all of which, however, have not only promoted—as, indeed, does natural maturation—oxidation *per se* but also evaporation. It must be noted here that in the evaporation of a complicated liquid like whisky those substances will have the greatest tendency to escape which have the lowest boiling-point. The higher alcohols do not possess this property. Nevertheless, however high the boiling point of a given constituent of whisky may be some of it will escape. Under these circumstances it is difficult in judging of these artificial maturation processes, as indeed of so-called natural maturation, to know how much of the effect to ascribe to evaporation and how much to oxidation.[7] Recently, however, a process for the artificial maturation of whisky, primarily intended for the removal of fusel oil, has been patented which certainly owes its result entirely to forced evaporation. This process is certainly as successful, if not more so, than those combining evaporation with oxidation. We have had especial facilities of examining the product of this last-named process and there is no doubt that by means of it raw whisky is deprived in the course of half an hour or so of its raw and offensive smell. Analyses of the treated spirits show that the greatest change which they have undergone is a diminution in their fusel oil content.

If, however, we come to examine this so-called defuselised whisky we find that it approaches more or less closely to silent spirit, that is, pure ethylic alcohol, in character. In other words, the spirit has by the process lost some of the essential attributes of whisky. This fact leads us to a consideration of the relation between the higher alcohols and the bouquet-giving constituents of whisky. That there is a relation between these two sets of bodies is practically universally admitted since there is strong evidence that the alcoholic constituents of fusel oil, amylic, propylic, and butylic alcohols are largely concerned in the production of the compound ethers which have actually been isolated from whisky or old whisky casks. Valeric ether is one of the few bouquet-giving substances which has actually been obtained from grog.[8] Another substance having the aroma of jargonelle pears is butyric acetate. This is produced from butyric alcohol and acetic acid, the latter being formed by the oxidation of ethylic alcohol, either in the fermenting back or subsequently.[9]

It must not be assumed, however, that the substances above named are the only ones to which the flavour of good old whisky is due. Rich malt whisky when perfectly raw contains free acids of the fatty series and also compound ethers. There is further analytical evidence to show that the actual development of compound ethers in the cask during maturation is slight;[10] in other words, that it is the compound ethers which were originally present that bestow upon the matured whisky its eventual flavour. If we accept this view we must assume that the maturation of whisky consists not so much in a process characterised by the development through oxidation of bouquet-giving substances as in the disappearance or change in the nature of bodies which mask the flavour of the compound ethers originally present. One fact seems quite certain—viz., that a whisky originally poor in fatty acids and compound ethers never develops into a full-bodied whisky.

Another class of compounds present in whisky both raw and matured and which have up to the present attracted but little attention are the aldehydes. The most recent process invented for the improvement of whisky manufacture consists in the extraction, by chemical means, of the aldehydes from the low wines. This is done by transforming them into hydrazones. These substances being non-volatile do not pass over upon the subsequent distillation of the

of the same strength. According to these observers, however, subsequent experiments made *in vivo* showed that the above experiments *in vitro* had not much practical value. *In vivo* whisky behaved practically identically with ethylic alcohol of the same strength.—Vide Chittenden and others: American Journal of Medical Sciences, 1896, January-April, pp. 35, 163, 314, 431; also American Journal of Physiology, 1898, vol. i., p. 164.

[4] Swain: Brit. Med. Jour., 1891, vol. i., p. 903. It must be, however, noted with regard to this death that the "feints" consumed undoubtedly contained aldehydes, and that the poisonous nature of the aldehydes was apparently unknown to the author. The inclusion in this paper of an explanation of technical terms would render it too long; the reader is referred on this subject to, *inter alia*, the following:—Allen, Commercial Organic Analysis, vol. i.; Matthews, Alcoholic Fermentation; and Moercke, Handbuch der Spiritus Fabrication.

[5] Allen: Evidence before Select Committee, 1891. Also Bell: Evidence before same Committee.

[6] In some analyses at present unpublished and made while this paper was passing through the press, the percentage of higher alcohols reached 0·25 per cent.

[7] These considerations are especially of interest with regard to furfural or the compound ethers. Furfural boils at 162°, ethyl acetate at 73° (lower than ethylic alcohol), and amyl acetate at 137° (*vide infra*).

[8] Lindet: Comptes Rendus, cxii., 102. Allen: Organic Commercial Analysis, vol. i., p. 149.

[9] Another consideration which should not be neglected in this connexion is that these higher alcohols are biological as distinguished from chemical products. They are produced in the fermentation backs at the end of fermentation and probably depend for their origin chiefly upon those conditions of yeast life occurring as a consequence of the disappearance of the sugar. Further, the species of ferment used seems to affect the character of the higher alcohols produced.

[10] Bell: Loc. cit.

low wines; by this means the raw whisky is rendered entirely free from aldehydic bodies. The interesting point of this process is that by means of it only the aldehydes and the acetals (compounds of the aldehydes with alcohols) are removed; the higher alcohols, fatty acids and compound ethers are left intact. Raw whisky treated in this way loses practically entirely its pungent and irritating taste and smell. This fact must lead us to reconsider the view which has been up to the present universally adopted—viz., that the characteristic smell and taste of raw whisky are due to the higher alcohols. This obviously cannot be so, as the new whisky produced in the above manner—i.e., from dealdehyded low wines—although containing the higher alcohols has no pungent taste or flavour. We must, therefore, now ascribe the pungency of raw whisky either to aldehydes or to acetals.

Concerning the actual aldehydes present in whisky either raw or matured very little is known; until quite recently no accurate method of estimating them has been available. Concerning their amount it may be said that as much as 20 milligrammes of aldehydes have been found in 100 cubic centimetres of German Branntwein.[11] One aldehyde, however, furfural, has for a long time attracted the attention of chemists and pharmacologists. The reason for this most probably is that this substance gives a very delicate colour reaction by means of which its presence even in the most minute traces can easily be detected.[12]

Furfural in dilute solutions has a taste which is not unpleasant and resembles that of benzaldehyde. This latter substance has a taste of bitter almonds and is constantly used for flavouring liqueurs and artificially concocted brandies and other spirits. Benzaldehyde is distinctly poisonous and its use for this purpose is not to be recommended. Furfural has been the subject of a good deal of pharmacological work.[13] It is about 50 times as poisonous as ordinary ethylic alcohol and gives rise in adequate quantities to epileptiform convulsions, general muscular paralysis ending in paralysis of the respiratory muscles, and death. In the body furfural is oxidised to pyromucic acid which substance is physiologically inactive. The symptoms to which furfural gives rise are practically the same in all animals, but with regard to dose pigeons seem most susceptible to its action. In the higher animals when given on an empty stomach it is absorbed almost as rapidly as when injected sub cutem and it gives rise to complete paralysis of voluntary movement. As the animal recovers from this epileptiform convulsions appear. These convulsions are probably due to irritation of the cortical motor-centres and are thus brought into line with those caused by one of the constituents of absinthe. The exact origin of these convulsions is a matter of interest in that, speaking generally, drugs stimulating the cortical motor-centres stimulate also the psychical centres. For instance, cocaine and belladonna exert a marked stimulating action upon the cortical motor-centres, the effect, however, not extending to convulsions but manifesting itself in restlessness. In larger doses both these drugs, especially belladonna, give rise to a mental condition characterised by mania of a very restless kind. Profound restlessness often follows the consumption of spirits and is difficult to explain simply as the result of ethylic alcohol. It is, further, a fact well known to alienists that epileptic mania, one of the most dangerous forms of mania of which we have any cognisance, often alternates in epileptics with true epileptic convulsions. The relation between mania and convulsions is tersely expressed by a leading alienist in adopting the term "ideational convulsion" for the former. Pure ethylic alcohol, so far as we know, causes neither mania nor convulsions. The class of bodies which we are now considering—viz., aldehydes—do universally cause convulsions, and there is also evidence that at least one aldehyde—viz., furfural—gives rise to great cerebral excitement, animals to whom it had been administered becoming possessed with "a kind of sad fury."[14] The fact that different kinds of alcoholic drinks produce when freely imbibed different mental states—gay, sad, maudlin, &c.—also points to the conclusion that it is probably the by-products contained in spirituous drinks, rather than the ethylic alcohol itself, which give the special timbre to the mentation of the drinker or drunkard.

These considerations are of some ethical interest in that crimes in public-houses, or, at any rate, committed by persons in the initial stages of alcoholic poisoning, are by no means infrequent. These crimes have two peculiarities: they are generally motiveless, at least when judged by the standard of the sane, and they are committed by persons who have taken sufficient drink to affect their minds but not enough to paralyse their muscles. This latter fact shows that the actual amount of alcohol consumed has not been great. The crimes seem to have been committed under the influence of some mental aberration. We know that alcohol paralyses control and therefore it is conceivable that supposing a man had a grudge against his neighbour, although he might normally be able by exercising control to keep his hands off him, yet if he took a glass of pure alcohol and then found himself in the same public-house with the obnoxious acquaintance the alcohol would have so paralysed his control that he would proceed to attack the object of his dislike. The case, however, is quite different when, as sometimes happens, the two combatants were until the liquor was drunk apparently the best of friends and then suddenly under the influence of distorted imagination fell upon one another, often with the most disastrous results. When arraigned before the magistrate the next morning the excuse made by the prisoner for his conduct is that he was under the influence of drink. He was; but we very much doubt whether he was under the influence of ethylic alcohol.

With regard to the presence in whisky of aldehydes other than furfural and their physiological action very little is known. Ordinary aldehyde was found in a 25 years' old brandy to the extent of 0·0003 per cent.[15] Compound ethers, chiefly ethyl acetate, were present in the same brandy to the amount of 0·042 per cent. Acetic aldehyde (CH_3COH) has physiologically an irritant action upon all the mucous membranes and when absorbed causes, first, irritation of the central nervous system and subsequently complete anæsthesia. Death takes place from asphyxia due to respiratory failure. Another aldehyde present in raw spirit is croton-aldehyde.[16] This substance is also poisonous and when taken in approximately the same quantities as furfural causes great irritation and strong tremors. These tremors are of interest with regard to the work of Sten Stenberg[17] who investigated the difference between the acute alcoholic intoxications produced by raw potato spirit, potato spirit purified by being filtered through charcoal, and pure ethylic alcohol. All the liquids given contained equal quantities of ethylic alcohol, so, therefore, the difference between them was presumably simply one of by-products. The difference in the symptoms produced was not great; it was *a priori* to be expected that it would not be. Nevertheless, it is evident from the experimental protocols, though apparently unnoticed by the investigator himself, that the occurrence of tremors was more common in the case of the raw potato spirit and the potato spirit purified by means of charcoal than in that of the pure ethylic alcohol. Experiments made recently[18] upon acute alcoholic intoxication by means of ordinary and dealdehyded spirit have shown that the return from the state of intoxication to the normal is different in the two cases, being in the case of the spirit containing aldehydes longer and accompanied by secondary symptoms—e.g., refusal of food, restlessness, and bad temper.

These specific facts, taken into consideration with the general physiologico-chemical properties of the aldehydes, especially their tendency to form compounds with proteids differing essentially from the original substances[19] and the fact that, even if taken in doses apparently incapable of producing symptoms, they are oxidised in the body to

[11] Kunkel: Handbuch der Toxicologie, vol. i., p. 423.

[12] Lauder Brunton and Tunnicliffe: THE LANCET, Dec. 8th, 1900, p. 1643. It is interesting to note that this colour reaction was formerly taken as indicative of "fusel oil."

[13] Curci: Ricerche Farmacologiche sulla Serie Furfurica, reprint from La Terapia Moderna. Lauder Brunton and Tunnicliffe, loc. cit. Cohn: Archiv für Experimentelle Pathologie und Pharmacologie, xxxi., p. 40. Lepine: Comptes Rendus de la Société de Biologie. Jeffrey and Serveaux: Archives de Médecine Expérimentales, 1896, p. 195. Laborde: Bulletin de l'Académie de Médecine, xx., 1888: N. 40, p. 170; N. 42, p. 526. Daremberg: Bulletin de l'Académie, 1895, iv.; No. 41, p. 332.

[14] Curci, quoted by Lauder Brunton (evidence before Select Committee, 1891).

[15] Ordonneau: Comptes Rendus, cii., 217, quoted by Allen, Organic Commercial Analysis, vol. i., p. 149.

[16] Kunkel: loc. cit., vol. i., p. 465.

[17] Archiv für Experimentelle Pathologie und Pharmakologie, vol. x., p. 355 et seq.

[18] Lauder Brunton and Tunnicliffe, loc. cit.

[19] For literature of this subject *vide* Tunnicliffe and Rosenheim on the Influence of Formic Aldehyde upon the Metabolism of Children Journal of Hygiene, July, 1901.

acids and thus diminishing the alkalinity of the blood tend to produce the phenomena of acid intoxication, certainly lead us to the conclusion that if they are not necessary for the production of whisky they are much better out of it.

This leads us to a discussion of the manner and the extent of the relationship, if any, between the aldehydes and the bouquet-giving substances in whisky. It must first of all be noted in this connexion that whisky produced from dealdehyded low wines will be freed from both aldehydes and also acetals. It behoves us, therefore, to consider the probable effect upon the ultimate bouquet of whisky of the removal of both these classes of bodies. There can be no doubt concerning the effect of this treatment of the low wines upon the immediate taste of the whisky. Instead of the whisky appearing as a nauseating and irritant liquid it occurs certainly as an inoffensive drink. Alhehydes as such, speaking generally, are not possessed of an agreeable flavour. The lower aldehydes are, of course, notoriously irritating and so must those, *ex hypothesi*, be which are removed from raw whisky. This can easily be demonstrated by decomposing with dilute mineral acid the hydrazones formed by treating raw whisky with phenyl-hydrazine-sodium-sulphonate and left behind upon subsequent distillation. The original aldehydes are by this method liberated and have a pungent and irritating odour closely resembling that of the original whisky. With regard to the higher aldehydes it is known that in certain in-tances they occur as a constituent of the ethereal oils of certain fruits. Our knowledge upon this subject, however, is indefinite, although there seems no doubt that two substances known as citral and citronellal are used extensively in the manufacture of artificial perfumes. These substances, however, have never been demonstrated in whisky, raw or matured, and there is no reason to assume that they play any part in its flavour.

It is a known fact that there is now on the market a large assortment of artificially concocted fruit essences. These are largely used in the manufacture of so-called temperance beverages and in cookery, and they impart to the substances to which they are added a flavour almost identical with the fruit, as indicated on the label, to which they correspond. Although the composition of some of these essences is kept a secret the ingredients of the majority of them are known. The compound ethers are their most important constituents and are almost invariably associated with glycerine and occasionally with tartaric, succinic, or benzoic acids. Aldehyde—acetic aldehyde—is also made use of in some of these preparations, but it is difficult to see what purpose it serves, as it is admitted that both it and chloroform, which is also used, can be omitted without serious detriment to the flavour of the essence.[20] A study, then, of the composition of these essences leads us to the conclusion that aldehydes, speaking generally, are not likely to be intimately concerned in the development of bouquet.

With regard to the acetals it is an undoubted fact that these substances are intimately associated with the development of bouquet in wine. As was, however, pointed out earlier in this paper no analogy can *a priori* be assumed between the ageing of wine and the maturation of whisky. That the bouquet of mature whisky owes little, if anything, to acetal is certainly to be assumed from the fact that although it has been recognised as a constituent of mature spirits one of the greatest workers in this country upon this subject frankly asserts that he has never been able to demonstrate its presence in either raw or mature whisky. Nobody, so far as we know, has ever isolated it from raw whisky. With regard to the acetal corresponding to furfural we have no knowledge nor have we been able to obtain any information. That furfural undergoes but little change during maturation is evident from the fact that the quantitative estimations of it in raw and mature whisky differ but slightly. This difference, furfural apparently diminishing with age, can certainly be explained by its evaporation—the assumption that some furfural has been fixed or oxidised is entirely gratuitous. It must further be remembered that the acetals are unstable bodies and in the presence of dilute acids readily decompose into the corresponding alcohol and aldehyde.

CONCLUSIONS.

From the above considerations we seem justified in concluding that the aldehydes to which the initial irritating taste and flavour of raw pot-still whisky must be ascribed are only indirectly—viz., by their disappearance—concerned with the ultimate bouquet of old whisky. It further appears that since at least some of the energy of maturation is spent upon the disappearance of these substances it is probable that an initially dealdehyded spirit will become mature in a shorter time than an ordinary one. The last conclusion that we would draw is that since the aldehydes and furfural do not seem necessary for the production of whisky they are from the point of view of the public health better removed from it.

[20] Quoted from Allen, loc. cit., p. 215.

DILATATION OF THE HEART AND OTHER MANIFESTATIONS OF WEAKENING OF THE HEART AS RESULTS OF RHEUMATISM.

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RHEUMATIC dilatation of the heart and rheumatic myocarditis have of recent years been brought more or less prominently before the profession. This has been largely due to the observations of Dr. D. B. Lees and Dr. F. J. Poynton. Dr. Graham Steell also speaks of the injurious effect of rheumatism upon the cardiac muscle and says[1]: "My belief in the importance of the changes wrought by rheumatic endocarditis as the cause of initial incompetence received a rude shock by a post-mortem examination of a patient who had shown the ordinary clinical signs of mitral incompetence from valve lesion. The examination revealed practically sound mitral curtains but a markedly dilated heart." About a year before Dr. Lees and Dr. Poynton brought forward their paper upon dilatation of the heart due to rheumatism I read a paper before the Bristol Medico-Chirurgical Society in which I argued that the generally accepted view of the frequency of mitral regurgitation due to valvular disease had been based upon errors of observation,[2] and used a few clinical facts and others from the post-mortem room in support of my contention. It is scarcely necessary to remark that from the point of view of prognosis the subject is an important one. If a murmur heard at the apex be due to a valvular lesion then there must be few who will maintain that the injury will not be permanent. If, however, the murmur owes its existence to some dilatation of the heart, then there is hope, in some cases at least, that recovery may follow. Dr. Caton,[3] who has noticed cardiac murmurs arising during acute rheumatism disappear under the influence of blisters, mistakes, it seems to me, both the cause of the murmurs and the method of action of his treatment. The patients during the application of the blisters are kept in bed for a long period, and we may suppose that it is not the blisters that cure endocarditis but that prolonged rest in bed enables a dilated heart to contract again.[4] But murmurs may occasionally disappear even after the patient has left the hospital. In 1896 I admitted a girl, aged 10 years, into the Bristol Children's Hospital who was suffering from rheumatic pericarditis. She recovered and a year later she returned as an out-patient for some minor ailment. Although little dilatation of the heart could be detected, a blowing systolic murmur was present at the apex, and the history showed that some weakening of the heart was present. To use her mother's words, "she could not walk up hill as well as her grandmother." At the end of another two years the girl was seen a third time. She had grown considerably and she presented a more animated appearance. In spite of some anæmia, for which she attended the hospital, the dyspnœa on exertion had almost disappeared and no trace of the systolic murmur could be discovered. But rheumatic

[1] The Sphygmograph in Clinical Medicine, p. 35.
[2] THE LANCET, July 18th, 1896, p. 170.
[3] Brit. Med. Jour., vol. i., 1896, p. 207.
[4] It is interesting to note in this connexion that Hibberd observed in 24 cases of diphtheria in which a mitral systolic murmur was present that the murmur disappeared in three weeks in 21 of the cases and in the remaining three in eight weeks. Quoted by Morton Prince American Journal of the Medical Sciences, 1901, vol. cxxi., p. 205.

dilatation of the heart, although it may be uncomplicated by a valvular lesion or by general adhesion of the pericardium, may be permanent and, as the following case shows, may result in early death.

A youth, aged 19 years, was admitted into the Bristol Royal Infirmary on Nov. 16th, 1899, under the care of Dr. H. Waldo. Two years before he had suffered from an attack of rheumatic fever and did not regain his health after the acute illness had passed away. For three months before admission his strength had been rapidly failing. On admission he was obviously very ill. The cardiac impulse was diffuse and visible as far as the mid-axilla. A high-pitched systolic murmur was audible over the cardiac area and into the axilla and the second sound at the apex was replaced by a "faint rumble." The patient grew worse and was delirious some days before death which took place three weeks after admission. At the necropsy the heart was found to be generally and greatly dilated. It measured across the ventricles just over six inches. Some hypertrophy was also present, as is shown by the weight of 15½ ounces. A small patch of adhesions about one and a half inches square showed that localised pericarditis had at the time been present over part of the front of the ventricles. Elsewhere the pericardium presented no trace of former pericarditis. The tricuspid and mitral orifices had shared in the general dilatation of the heart. The tricuspid orifice measured six inches in circumference, the mitral nearly five and a half inches. The cusps of the tricuspid valve were normal and neither the flaps of the mitral valve nor the chordæ tendineæ attached to them presented any trace of thickening. The pulmonary valve presented nothing abnormal and the aortic valve was also competent and its cusps were free from thickening. The coronary arteries were healthy and the cardiac muscle to the naked eye showed no fibrosis.

In this case it was impossible to conclude that the small patch of adhesions could have been the cause of the cardiac dilatation. Yet although sufficient damage must have been done to the cardiac muscle to cause death microscopical examination did not reveal any great amount of interstitial myocarditis, much less, in fact, than is not infrequently seen in old-standing cases of mitral stenosis. It seems possible that rheumatism may have the power of interfering with the nutrition of a growing heart and impair the function of the cardiac muscle without giving rise to evidence of very gross lesions. Gross lesions do, however, undoubtedly occur and in the severe rheumatic poisoning which is present in fatal pericarditis the microscope always shows some changes in the myocardium.

It is interesting to note also that in cases where death from pericarditis has been somewhat delayed the presence of disease of the cardiac muscle may often be clearly evident to the naked eye. When the heart has been opened white specks and streaks due to degeneration of the muscle fibres may be seen dotting the heart muscle beneath the endocardium. A similar appearance may occasionally be seen after death from rheumatic heart disease where no pericarditis is present. For example, a boy, 12 years of age, suffering from mitral stenosis, complained of pain in the region of the heart. The pulse became rapid and feeble and four days after the onset of the pain he died. At the necropsy the pericardium was found to be perfectly healthy but the ventricles were speckled with small yellowish-white spots and streaks. On opening the heart the inner surface of the ventricles presented the same appearance in a slighter degree and cuts into the muscular walls showed that the cardiac muscle was everywhere similarly affected.

While, however, lesions of the cardiac muscle may undoubtedly be produced by rheumatism they are not nearly so marked as are those which are frequently present in diphtheria, and it is often difficult to believe that the morbid appearances discoverable by the microscope will explain the cardiac failure which has resulted in death. Yet it must be mentioned that in one case, which I hope shortly to publish, the degeneration of the cardiac muscle fibres in a case of rheumatism was so extreme that it was difficult to understand how the heart could have continued to beat as long as it did. Dr. J. H. Sequeira,[5] noticing the want of evidence of severe damage to the cardiac muscle in some cases of rheumatic pericarditis, has brought forward a theory which he considers explains the dilatation of the heart. It does not appear to me that his theory can be supported by facts but it may be of interest to briefly consider it here. Adopting the views of Hill and Barnard as to the function of the fibrous pericardium Sequeira[6] considers that when inflamed it becomes weakened and fails to exert efficiently its power of preventing abnormal distension of the heart. It is doubtful, however, whether the inflammation of the serous pericardium affects the fibrous pericardium so seriously as to cause it to give way readily under pressure. In more severe forms of pericarditis, such as the suppurative pericarditis of pneumonia, where one would expect the fibrous pericardium to be more affected, the dilatation of the heart is not nearly so marked as in rheumatic pericarditis.[7] But on other grounds we may consider Dr. Sequeira's theory to be highly improbable. A few simple experiments in the post-mortem room will show that if the pericardium exerts a restraining power upon distension of the heart it must do so only in extreme emergencies and it is doubtful whether it can exert any pressure upon the heart even then. The method of showing this is as follows. After rigor mortis of the heart has passed off the pericardium is distended with water at a certain pressure—e.g., that of a column of water 10 inches in height. A measure is taken of the number of ounces of water used. After tying the vessels of the heart at their points of entrance into, and exit from, the pericardium this membranous sac is cut open and the cavities of the heart are distended at the same pressure as that employed in filling the pericardium. The amount of water required is noted, the heart is opened, and a measure is taken of the amount of blood-clot which it contains. The number of ounces of water used in filling the heart, together with the blood-clot which it may contain, will almost invariably be found to be less than the amount of water held by the pericardium. A few examples may be given. In the case of a man, aged 24 years, who died from enteric fever, the pericardium held 20 ounces of water, and the four cavities of the heart 14 ounces of water and blood-clot; in that of a boy, aged 14 years, who died from enteric fever, the pericardium contained 15½ ounces, and the cavities of the heart nine and a half ounces; in that of a man, aged 21 years, who died from enteric fever, the pericardium held 20 ounces, and the heart 15½ ounces; in that of a youth, aged 18 years, who died from enteric fever, the pericardium held 12 ounces and the heart 11 ounces; in that of a man, aged 60 years, who died from carcinoma of the stomach, the pericardium held 16 ounces and the heart 12½ ounces; and in that of a woman, aged 39 years, who died from cirrhosis of the liver, the pericardium held 18 ounces and the heart 13½ ounces. In one instance, however, in which the heart was apparently healthy, the cardiac cavities contained more than had been held by the pericardium. In the case of a woman who died from suppurative peritonitis consequent upon perforation of a gastric ulcer the pericardium held only 15 ounces while the heart held 22 ounces. In another case where the heart was greatly dilated owing to the presence of fibrous myocarditis the pericardium held 24 ounces but the heart held 30 ounces. In the last case, however, it is worthy of note that the cardiac muscle was diseased and consequently the fact that the heart was capable of holding more water than the pericardium shows that the pericardium was unable to prevent the dilatation of the heart which resulted from this disease. This case, therefore, tends to militate against, rather than to support, the theory that the pericardium can exert a restraining influence upon dilatation of the heart. But allowing that in some instances a healthy heart can be distended in the post-mortem room more than the pericardium it is very doubtful whether that would be possible during life. All four cavities could not then be fully distended at the same time. There must be room within the pericardial sac for the auricles to empty themselves into the ventricles.

It would appear, then, that in most people the fibrous pericardium does not fit the heart so closely that there is not sufficient space within it for considerable dilatation of the heart. If this be so we may dismiss from our minds the idea that the dilatation of the heart which occurs in rheumatic pericarditis is simply due to weakening of the fibrous pericardium. Although microscopical examination of the cardiac muscle may not reveal the amount of disease one

[5] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxii., p. 360.

[6] Ibid., p. 410.

[7] A recent paper by Dr. Still shows that the absence of marked dilatation of the heart in the pericarditis of pneumonia has attracted his attention. Brit. Med. Jour., vol. ii. 1901, p. 606.

might expect, the most reasonable explanation of the dilatation is poisoning of the heart-wall.

Rheumatic poisoning of the heart does not, however, occasion only dilatation. After rheumatic pericarditis some hypertrophy usually takes place and may be great in degree. This has been attributed to the deleterious effect of adhesions, but occasionally one may meet with enlargement of the heart following a rheumatic attack in which neither adhesions nor valvular disease are present. For example, a boy, aged eight years, was admitted under the care of Dr. S. W. Wheaton into the Royal Hospital for Children and Women, Waterloo-road, in 1892, who had suffered for two years from symptoms pointing to disease of the heart. A few weeks before admission these symptoms had become aggravated at a time swelling of the knees had been present. On admission there were great dyspnœa and a rapidly beating heart, the pulse being 140 to the minute. The dyspnœa became worse and the pulse more rapid and at the end of 10 days the boy died. At the necropsy no trace of pericarditis could be found. The heart was much enlarged, extending downwards to the sixth intercostal space and outwards one inch to the left of the nipple line. Its weight was 10 ounces, double the normal weight for a boy of his age. A previous attack of rheumatism was indicated by thickening of the segments of the aortic and mitral valves and a recent attack by rows of small vegetations upon the same valves. The aortic valve, however, was competent and it was obvious that the thickening of the mitral valve could account neither for death nor for the great enlargement of the heart. Clinically the symptoms were those of pericarditis and it seemed reasonable to suppose that death had been due to rheumatic poisoning of the heart-muscle without the usual association of inflammation of the pericardium. Microscopical sections of the heart-wall seemed to show that the enlargement was in part at least of recent origin, since in addition to some interstitial myocarditis the blood-vessels were greatly injected. In this case apparently the enlargement was mainly, but by no means entirely, due to increase in the amount of blood in the heart-wall. That a great quantity of blood and serous fluid in the heart-wall may be partly responsible for enlargement of the heart in rheumatic pericarditis is suggested by the rapidity with which the weight of the heart may increase. Dr. Goodhart long ago noticed this rapid enlargement in rheumatic pericarditis and he showed a specimen before the Pathological Society of London from a youth, aged 17 years, where the heart apparently doubled its weight in a month.[8] Dr. Sequeira mentions a case where, in a girl, aged 11 years, it doubled its weight in three weeks, and I have met with an instance where the heart apparently increased in size to the same amount in a fortnight. A girl, aged 11 years, was admitted by me into the Bristol Children's Hospital for rheumatism with rheumatoid nodules. I could detect no enlargement of the heart. Three weeks later acute pericarditis set in and after it had lasted a fortnight the girl died. The heart was found to weigh 11½ ounces, fully double the normal weight in a girl of her age. There was recent endocarditis but no old disease of the valves. On microscopical examination the sections showed an unusual amount of interstitial myocarditis associated with great injection of the blood-vessels. In some sections the distended capillaries occupied nearly as much space in the field as the muscular fibres. This injection of the blood-vessels, in varying degree, is a constant feature of microscopical sections of the heart-muscle from cases of rheumatic pericarditis. The appearance of the interstitial tissue frequently suggests also that an increase of serous fluid in the heart-wall is present. It is possible, however, that enlargement of the heart may be in part due to increase in size of the muscle fibres. In their weakened condition they may attempt to gather fresh energy by calling more largely upon their sources of nourishment and swell up in so doing. Although the enlargement of the heart which occurs in rheumatic pericarditis may be of this comparatively simple nature it must be noted that it does not often subside when the acute inflammation has passed off. On the contrary, the hypertrophy may go on increasing until the heart even of a child of the age of 12 years may weigh between 20 and 30 ounces. Dr. J. F. H. Broadbent has suggested that when the heart is dilated adhesions resulting from the pericarditis prevent its return to the normal size. Adhesions, however, do little to hamper the action of the heart, as is shown by the fact that when they follow pericarditis due to other causes than rheumatism, such as pneumonia or tuberculosis, no enlargement of the heart takes place.[9] The only way in which pericardial adhesions could retain the heart in its dilated condition would be through the medium of other adhesions outside the fibrous pericardium provided on all sides with fixed points of attachment. Such fixed points, it is needless to say, cannot be found. The chest-wall provides in front an area of attachment, but adhesions when present there are generally of too loose a character to be capable of preventing movement of the heart. The mobility of the heart, it may be remarked, in cases of enlargement following pericarditis, can in some cases at least be proved clinically by noting the different positions of the apex-beat when the patient is lying in the recumbent position and upon the side. It has not been my custom to test this point in every case, but in three cases of enlargement of the heart following acute rheumatic pericarditis in which the position of the apex-beat in different positions of the body has been noted I find that movement occurred in every instance. Thus, in a girl, aged 12 years, who was examined before her return home after an attack of pericarditis, the apex-beat when she was lying on her left side was fully one inch to the left of the position which it occupied when she was standing up. It may be added that the girl returned six months later and died. The pericardium was found to be universally adherent by loose adhesions. Although the heart had been freely moveable it was much hypertrophied. The weight was 14 ounces.

The above facts—namely, that adhesions left by pericarditis due to such diseases as pneumonia or tuberculosis do not lead to hypertrophy of the heart, and that the heart may be freely moveable over the front of the chest-wall and yet continue to increase in size—show that neither internal nor external pericardial adhesions can be the cause of cardiac enlargement following rheumatism. To offer a better explanation is, however, not easy. Yet it seems possible that poisoning of the cardiac muscle may interfere with its nutrition and occasion hypertrophy. The power which poisoning of the heart-muscle possesses to give rise to enlargement of the heart is seen in the hypertrophy due to over-indulgence in alcohol. It may be mentioned in passing also that it seems possible that the enlargement of the heart attributed to exercise and work may also be due to poisoning of the cardiac muscle by waste products of metabolism. Such enlargement appears to occur, not where there is hard work merely, but where hard work and exposure to great heat are combined. The only two cases of enlargement of the heart which I have met with in the post-mortem room of the Bristol Royal Infirmary which could be attributed alone to the strain of excessive work occurred in a blacksmith and in a stoker in gas-works. Perusal of the Guy's Hospital post-mortem records for 10 years showed three cases which by exclusion of other causes seemed to resolve themselves into hypertrophy due to overwork. These three cases occurred in a blacksmith, a stoker, and a labourer in gas-works. Possibly work in great heat causes the water drunk to be thrown off almost entirely by the skin and leads to the retention in the circulation of waste products of metabolism which would otherwise be excreted by the kidneys. The waste products weaken the heart which in attempts to carry on its work occasions its own hypertrophy.

To return, however, to enlargement of the heart due to rheumatism, if a poison such as alcohol can produce enlargement of the heart it does not seem unreasonable to suppose that the toxins of rheumatism may do so also. This appears especially probable when it is remembered that rheumatism affects the heart most seriously while that organ is growing. Marked enlargement of the heart very rarely follows an attack of rheumatic pericarditis occurring after the age of 20 years. An altered nutrition due to poisoning of the cardiac muscle would explain also the weak nature of the hypertrophy. Some statistics[10] gathered by me from the Guy's Hospital post-mortem records illustrate this weakness. They

[8] Transactions of the Pathological Society of London, 1879, p. 279.

[9] This is possibly not absolutely true. I have met with two cases in which dilatation of the heart appeared to have been the sequel of pericarditis in pneumonia. Such cases, however, in my experience are very exceptional.

[10] Adherent Pericardium in Children, Bristol Medico-Chirurgical Journal, 1894, p. 93.

show that rheumatic pericarditis occurring before the age of 12 years and followed by enlargement of the heart generally leads to death before the age of 20 years and very frequently about the age of 15 years. Thus the records during seven years showed 13 cases of death at the age of 15 years and under in which enlargement of the heart was associated with general adhesion of the pericardium but without marked valvular disease. In six of these the valves were described as being normal. As an example of the enlargement of the heart in these cases in the absence of associated valvular disease it may be mentioned that in a boy, aged 13 years, the heart weighed 22 ounces. Four cases of death occurred between the ages of 15 and 20 years, but in these cases valvular disease was more marked, and after the age of 20 years there was no case of enlargement of the heart associated with general adhesion of the pericardium in which the valvular disease was so slight that its importance as a cause of death could be excluded. Death may not occur until after the age of 20 years, but if much hypertrophy of the heart be present death will not be long delayed. A case now and again may be met with where the cause of death is an enlarged heart associated with general adhesion of the pericardium without marked valvular disease, as late as the age of 25 years, but I have never met with one after that age. An adherent pericardium may be found to be present in cases of death from rheumatic valvular disease at almost any age, but in later life unless aortic regurgition be present the cardiac hypertrophy is rarely great. Sequeira,[11] who has comparatively recently carefully investigated the question of prognosis after pericarditis, gives extensive statistics which point to similar conclusions, but the additional fact is brought out that the fatality of enlargement of the heart associated with general adhesions of the pericardium is much greater about the age of 15 years in girls than it is in boys.

Pericarditis is an evidence of the most acute form of rheumatic poisoning of the heart and consequently the results are generally serious, but other minor manifestations of weakening of the heart may follow less severe poisoning by rheumatism. Although after a child has suffered from rheumatism no enlargement of the heart and no murmurs may be evident, the parents may complain that the child has lost its energy and that it is perhaps subject to fainting attacks, possibly when standing in school. Even mild attacks of angina pectoris may be present. Such attacks are thought to be due to hysteria, but it is possible for a neurotic disposition to mislead by causing an exaggeration of symptoms which have a physical basis. We know that the fatal form of angina pectoris is generally due to serious disease of the cardiac muscle and it seems reasonable to think it probable that many of the milder varieties of cardiac pain are due to slight disease or to temporary disturbance of nutrition of the myocardium.

Another interesting sequel of rheumatism in children is tachycardia. A brief reference to a mild case may be of interest. A girl, aged four years, was brought to the Bristol Children's Hospital by her mother who stated that the child often turned pale, complained of pain over the region of the heart, and that on putting her hand to the chest the mother could feel the heart beating forcibly and at a great rate. Physical examination of the heart revealed nothing noteworthy. It was, however, beating rapidly—148 to the minute. There was a history of pain and swelling in the joints and, curiously enough, during the week after the first visit to the hospital the child had to be kept in bed owing to pain and swelling in the right knee. In another case the heart of a boy, aged eight years, who had suffered from rheumatism was said to beat occasionally "as fast as it could beat." Few necropsies have been made upon cases of tachycardia but the heart-muscle has been found diseased in three out of six cases, a fact which suggests that when attacks of rapidity of the pulse follow rheumatism they are an indication of weakening of the myocardium.[12]

Various points in connexion with disease of the cardiac muscle following rheumatism have been briefly dealt with. To summarise a few, they are, first, that dilatation of the heart ending in death may occasionally occur without valvular disease or general adhesion of the pericardium being present; secondly, that in rare instances hypertrophy of the heart may occur without valvular disease or general adhesion of the pericardium; thirdly, that there is evidence that myocarditis may exist in the absence of pericarditis; and fourthly, that slight weakening of the myocardium may be shown by loss of physical energy, by attacks of cardiac pain, or by tachycardia.

The causation of dilatation and of hypertrophy of the heart associated with rheumatic pericarditis or with general adhesion of the pericardium has been considered and it has been thought that the most reasonable explanation of both is poisoning of the cardiac muscle.

Bristol.

[11] Transactions of the Royal Medical and Chirurgical Society, 1899, vol. lxxxii., p. 421.

[12] Herringham: Edinburgh Medical Journal, 1897, p. 366.

THE VENTILATION OF SHIPS, WITH A DESCRIPTION OF AN EFFICACIOUS METHOD.

BY WILLIAM EDWARD HOME, M.D., B.Sc., M.R.C.P. EDIN.,
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Now that scurvy has almost disappeared the chief cause of unhealthiness on board ships is overcrowding. Everyone who has read the report of the Plague Commission knows overcrowding to be, in the words of the president, Professor T. R. Fraser, "a relative term, and not co-relative with any specific number, but with the number present in a given space and the efficiency of the ventilation of that space."[1] Anything, then, that improves the ventilation of ships is of the greatest importance to us who practise at sea and to those in ships, passengers or crew, whose health is trusted to our care.

To secure adequate ventilation afloat is generally a struggle, except in a small craft in the tropics in fine weather. In bad weather it is almost impossible in an ordinary ship to get any ventilation at all, it is so difficult to exclude water from the pipes and openings intended to convey air only, and water must be kept out even if air has to be excluded also.

I am sorry to say that it was only recently that I came across a now widely used system of ventilators which has overcome this difficulty and which supplies a little fresh air during any weather. It was devised by Mr. Thomas Utley of Liverpool and has long been used in the largest ships in the world driving through the wildest weather, but I have not hitherto seen it described in the medical press.

Now, water troubles us in two separate forms—as rain, in comparatively small quantity, or in the great volume of seas sweeping past, and each form has to be met differently. Rain, of course, gives less trouble and it is excluded in the Utley skylight ventilator by an obvious arrangement of louvres and baffle-plates in the ridge of the skylight. Something of the same sort is done in Boyle's inlet ventilator. But the most novel and ingenious of these patents are those which exclude sea-water in mass. In each of the ventilating passages are two valve chambers containing cork floats of similar size (five inches in diameter and two and a quarter inches thick for a 12½-inch scuttle) travelling up and down on a central spindle. These valves, when air only passes, remain in their position of rest with the gangway left clear, but should a sea strike the ventilator and try to pass the valves first the lower, or distal, float, which is very loose on the spindle, is floated up and jammed against the concave top of the chamber, the joint being secured by a flexible disc of red rubber with thin tapering edges so arranged that the greater the pressure of the sea the more firmly is the rubber approximated to the roof of the chamber. A little water is forced through centrally and that in the same way, if in sufficient volume to be troublesome, seals the proximal chamber and thus no water passes the valves. Between the seas the cork valves fall back as the water drains away and the passage for air is again established.

The Utley porthole ventilator is shown in section in the accompanying illustration. It replaces the ordinary round "ports," "sidelights," or, as we call them in the navy, "scuttles." In its best form it takes up rather more room inboard (a matter of very little importance in a ship with a lining), slightly diminishes the amount of light, and costs about twice as much as the ordinary scuttle, but in consequence of the improvement which it works in the hygiene and amenity of the ship it is extensively used. I saw it in the *Oceanic* and in the

[1] Report of the Commission on Plague, vol. v., Appendix iii., p. 477.

Cymric, and I am told that every scuttle is so fitted in the *Lucania* and in the *Campania*—a sufficient proof that the system can withstand the heaviest weather. In case of fire the ventilating passages can be closed by plates analogous to deadlights.

I think that this system may be of great service to us in the navy, particularly as we are now giving up the ventilating of ships by cowls which will splinter in action if struck, but so far the Utley patent porthole ventilator has only been fitted in His Majesty's new yacht which had 146 built into her. Everyone will at once recognise that great benefits accrue to passengers in bad weather if such a ventilator is used, not

The illustration shows the Utley porthole ventilator in section. It is represented closed up as it would be in case of fire and, of course, not working. To the reader's left is the sea; the vertical line to the left is the ship's side; the inclined part to the right is the glass light covered by its protecting "dead light"; at the upper part the ventilating passages are seen arranged tandem, each with its large block of cork forming the valve. To allow the ventilator to act the handled screw shown at the top must be eased and turned up, when the iron plate covering the air passage can be dropped down.

only in preventing the ordinary results of overcrowding, sore-throats, boils, &c. (even typhus fever, that cousin german to plague, has broken out in crowded and ill-ventilated transports), but also in diminishing the evil effects commonly ascribed to sea-sickness, many of which, indeed, are due to bad weather only because it prevents any ventilation of the cabin to which the patient confines himself. And who is there, however good a sailor, who could live for two or three days, and, perhaps, with one or two companions, in a cubic space of 300 feet without much ventilation and not lose appetite or be otherwise "capsized"? We have all the apparently greater need for ventilation at sea as our standard of cubic space is 100 feet where that ashore is 1000 feet, even if we can do with less than 3000 cubic feet an hour of fine, fresh sea air with all its ozone.

There is an Utley cowl and deck ventilator, too, in which the double valves are fitted in cages (four, six, or eight) on the sides of the air-shafts. These cowls are made of steel and have a cap fitted like a deadlight that can be secured over the mouth. When this is closed in bad weather ventilation is not entirely stopped but some air can still pass safely either out or in—a great improvement on the old method which in bad weather replaced the cowl by an impermeable deck-plate.

The commercial value of these ventilators is shown in their use by the White Star, the Cunard, the Peninsular and Oriental, the Dominion, the Hamburg-American, the North German Lloyd, and other companies, and by our own and the German Governments.

Perhaps some medical officers of ships fitted with these ventilators will tell the readers of THE LANCET if they have diminished sickness; particularly would it be of interest if anyone could give his experience of two voyages to South Africa in transports equally full of men, one with these ventilators and one without.

H.M.S. *Galatea*, Chatham.

DIFFICULTIES IN DIAGNOSIS: CHICKEN-POX OR SMALL-POX?

BY W. M. YOUNG, M.D. R.U.I.

A WAITRESS in a City restaurant, 22 years of age, felt so ill on April 26th that she left her employment about the middle of the day, returned to rooms occupied by her sister in a house in Paddington, and there took to bed. When I saw her in the course of the afternoon she presented all the characteristics of a rather severe bout of the "rheumatic" variety of influenza. During the febrile stage she was treated with salicylate of sodium combined with ammonia, paregoric, and extract of liquorice. On the 29th, defervescence having been accomplished, she was given a mixture consisting of half a drachm of sulphate of quinine, half a drachm of solution of strychnine, two drachms of dilute hydrobromic acid, and compound infusion of gentian to six ounces, one tablespoonful to be taken three times a day in water. My next visit took place on the afternoon of May 1st and she then informed me that, as the catamenia had appeared during the previous night and she had not felt quite so well, she had remained in bed during the day. I noticed a few papules on her face but I looked upon these as associated with the menstrual period and possibly intensified, if not actually brought out, by the administration of the hydrobromic acid in the mixture. I did not think it worth while to use the thermometer as there was nothing to suggest a rise in the temperature and all the indications seemed to point to a mere evanescent menstrual disturbance. On the morning of the 2nd, however, I received a message requesting me to call to see the patient during the day and I accordingly paid a visit early that afternoon. The papular eruption had then become so prominent on the face as to be actually disfiguring and it had also appeared rather profusely at the back of both wrists. The temperature was 102° F. There was considerable discomfort in the lumbar region. The patient looked exceedingly ill and evinced such a decided tendency to syncope that strychnine was administered hypodermically. On the morning of the 3rd a large crop of papules appeared on the back of the neck and shoulders. The temperature had fallen to 101°. The other symptoms, including the severe prostration, were much the same as before and the patches of eruption which had first appeared still remained in the papular stage. On the morning of the 4th things remained much the same with the exception that the eruption had taken on a vesicular form. During the day the vesicles matured so rapidly that I came to the comforting conclusion that, notwithstanding the course followed by the eruption and the severity of the general symptoms, the case was nevertheless one of chicken-pox. My self-congratulations at having steered clear of the dread Scylla of premature removal of the patient to the small-pox hospital were, however, chastened by finding myself involved immediately afterwards in the vortex of a veritable Charybdis. The pronouncement to which I had committed myself in favour of the existence of the minor disease brought upon me a visit at my own residence from the occupier of one-half of the house in which the patient was lying. My uninvited visitor was so minatory in his attitude and seemed so anxious to assume the airs of a sea-lawyer in his cross-examination of the evidence on which I had based my diagnosis that I deemed it advisable to obtain a second opinion in order to protect myself against eventualities. As it was Sunday I did not care to bother the medical officer of health so I asked a friend in the neighbourhood to see the case

with me. The latter, whilst admitting the perplexing character of some of the symptoms, concurred in the diagnosis of varicella. The reception of the certificate by the medical officer of health on the following morning led to a friendly call from Dr. R. Dudfield during the afternoon. He was so much impressed by the resemblance which my description of the onset and development of the eruption bore to a case of modified small-pox, and a day or two previously he had been rendered so suspicious of such cases by having had what proved to be the more serious disease notified as the milder complaint, that we agreed that it would be best to visit the patient together. Even at this late stage the case was not at all one for "lightning diagnosis" and it was only after some considerable examination and discussion that the necessary official confirmation was given, the correctness of which has since been completely verified.

The case had a twofold interest. It was a good object-lesson in the pitfalls ever liable to trip up the cocksure tyro who refuses to apply to himself the sententious maxim of the late Master of Trinity: "We are none of us, not even the youngest, quite infallible." It also threw an interesting sidelight on what some people are pleased to call the frame of mind which is connoted by the fad of anti-vaccination. In the first instance the papular eruption bore a marked resemblance to a manifestation of bromism. If some little rise of temperature had been detected at this stage it might have been attributed fairly enough to the onset of the menstrual period so soon after the subsidence of the attack of influenza. The same conjunction of causes doubtless did occasion the discomfort in the lumbar region which although not amounting to actual pain in the back was sufficiently pronounced to be credited with a note of interrogation. The adult age of the patient, the appearance of the eruption first on the face and wrists, the prolonged papular stage of the earlier patches, the fall in the temperature at such an early stage of the development of the eruption, and the apparently profound constitutional disturbance all seemed to betoken varioloid. On the other hand there was never any vomiting or even nausea, there was very little headache, and later, when the papules had become vesicles, they matured so rapidly as to furnish the clue to a correct diagnosis.

The profound prostration which was a feature of the early stage and which lasted until the definite diagnosis had been established was a confusing but interesting incident; a fraction of it might properly be set down to the renewed febrile condition supervening on the debility which was the inevitable sequel of the influenza. By far the larger proportion of the disturbing influence was, however, not physical at all but psychic. The phenomenon was, in fact, "a sort of" death-bed repentance. A short time previously the girl, in common with the other members of the staff of the restaurant, had been given the opportunity of being vaccinated. Some propagandist of the anti-vaccination cult had, however, plied her with blood-curdling descriptions of the horrors attendant upon vacciuation, with the result that she had declined to submit to the operation. Still she had "had her doubts" about the soundness of the advice which had been given to her and when the eruption appeared copiously on her face on the morning of May 2nd her appeals as to whether it was small-pox and whether she would be much marked were quite piteous. The rather aggressive officiousness of the fellow-occupier of the house was to all intents and purposes a like exhibition of "the doubt of doubt." This gentleman first of all informed me in dogmatic fashion that he "did not believe in vaccination." Having thus duly paid obeisance to his fetish, he went on in more subdued tones to say how much he had been disturbed by the thought of his wife and children being possibly exposed to the contagion of small-pox. At last he confessed that his anxiety had become so great that he was contemplating, as a lesser evil, the handing over of them all to the cruel tender mercies of that modern personification of "the wicked," yclept ye public vaccinator.

In a general way the revelation of the Falstaffian character of the courage of the anti-vaccinationist has been one of the most salient features of the recent scare. During the years of immunity from the disease the Superior Person who (to quote the autobiographical notice of an orating anti-vaccinationist in "Who's Who") "has not been educated at all academically" achieves a certain measure of cheap notoriety by the vulgar flippancy of his references to the opinions of men of education who have devoted their lives to the investigation of the prevention of disease. Notwithstanding his "brave words" under such circumstances the attitude of the anti-vaccinationist in the presence of epidemic danger is often that of the stock character of Goody-goody story who, having duly shocked his maiden aunts by the blatancy of his atheism, is unexpectedly brought to the very verge of the Stygian river and there awakens to the terrible conviction that there may be a particularly sultry climate on the other bank after all.

Pembridge-road, W.

PRIMARY GANGRENE OF THE TONSILS.

BY ROBERT FULLERTON, M.D. EDIN.,
SURGEON TO THE OUT-DOOR DEPARTMENT FOR DISEASES OF THE THROAT AND NOSE OF THE ROYAL INFIRMARY, AND LECTURER IN ST. MUNGO'S COLLEGE, GLASGOW.

THE throat condition which forms the subject of the following notes occurred in the case of a medical friend, aged 37 years, who consulted me on June 13th, 1900. The history given stated that during the spring months he had become very much run down in health, was easily tired, and, indeed, felt so weak that he was scarcely able to carry on the duties of his practice. About the middle of May a severe cold in the head, which was accompanied by a considerable amount of nasal discharge with pain in both ears and in the pharyngeal region, confined him to the house for a week. The tonsils were not appreciably affected at this time, but about a week after resuming work they rapidly and without any apparent cause became acutely inflamed and the temperature rose to 103° F. Four days after this onset the throat presented the appearance of an acute follicular tonsillitis. About a week later an ulcer was observed on the right side of the upper lip, not far from the angle of the mouth. A few days afterwards a slough appeared on each tonsil. These sloughs spread rapidly and with this extension the parts became extremely painful.

When seen by me the patient, although usually robust, looked pale, anxious, and very ill. The throat was so acutely painful that the act of swallowing was rendered almost impossible. He spoke with difficulty and the voice was muffled and markedly nasal. The tongue was thickly coated, shreds of secretion clung to the palate, and the odour from the mouth was heavy and fœtid. The lymphatic glands at the angle of the jaw on both sides, but more especially on the left, were enlarged and tender to touch. The faucial tissues generally were inflamed and swollen and the uvula was markedly œdematous. A shallow ulcerated patch of about the size of a small lentil was present on the right upper lip, the edges of which were irregular but clean-cut, whilst the base when not covered by a yellowish débris had a raw look. The swollen tonsils—elongated and sessile in type—were covered in front by an adherent portion of the anterior pillars of the fauces. A sinuous trench-shaped excavation was present in the left tonsil, extending downwards to almost its lower limit from immediately below the edge of the soft palate. A greenish-yellow slough occupied this cavity which at the upper part appeared to involve the whole depth of the tonsillar tissue but became more superficial at its lower extremity. On removal of the slough the edges were found to be indurated and raw-looking. A small croupous patch, which was easily wiped off, was present on the surface of the tonsil. (See illustration.) The slough on the right tonsil, though not so extensive, closely resembled that just described. Neither the epiglottis nor the larynx was involved, and although a post-rhinoscopic view could not be obtained the inflammation appeared to be confined to the tissues of the fauces.

The appearance of the throat differed from anything that I had hitherto observed and conveyed the impression of a tertiary specific affection in a pharynx acutely inflamed. There were, however, no grounds for attributing it to syphilis and the history and subsequent course of the disease are against its having been due to that.

Prior to the patient being seen by me iron and quinine had been taken internally and antiseptic paints and gargles had been applied locally with little or no effect. I applied a 10 per cent. solution of cocaine to the parts and, having removed as far as possible all the necrotic tissue and débris, swabbed

the ulcerated surfaces with a strong solution of carbolic acid. In addition to having the mouth frequently washed out he was directed to take four times a day without dilution a teaspoonful of a mixture of tincture of the perchloride of iron and glycerine, one drachm to one ounce. When seen three days later the parts had much the same appearance as at the first examination, but the necrotic shreds having been then removed the cavities were now easily cleaned, and a solution of nitrate of silver (one drachm to one ounce) was applied to the raw surfaces. The treatment prescribed was the iron and glycerine mixture with a grain of opium at night and swabbing the ulcers twice daily with a 1 in 20 carbolic

Figure to illustrate the fauces in Case 1. The gap in the outline of the upper lip is a fault in the drawing.

acid solution. The patient, who in the meantime had been living at a sheep farm in the country for a fortnight, called again on July 19th. He stated that upon removing from town the parts had gradually healed and had remained well for a week, when the upper part of the left scar broke down. To this I applied the electric cautery and it healed in a few days. For several months subsequently the general health was indifferent but the throat gave no further trouble. When seen quite recently the site of the sloughs was marked by a distinct loss of tissue but there was no trace of the ulceration which had been present on the lip.

I felt a little uncertain as to the classification of this case and although it differed essentially from the acute ulcerating lacunar tonsillitis described by Moure, four examples of which I had seen, I was at first inclined to regard it as an unusually severe form of this affection.

About five months later—on Nov. 2nd, 1900—Dr. Alexander Robertson sent one of his servants to consult me in regard to a sore-throat from which she suffered. The girl, who was 23 years of age, stated that about four weeks previously she had caught cold when her tonsils became inflamed and had remained uncomfortable ever since. Three days before seeing me the right tonsil became very painful and the glands of the neck began to swell. The patient looked ill and complained of great pain on the right side of the throat. The lymphatic glands behind the angle of the jaw on the same side were considerably enlarged and very tender to touch. A slough in position, shape, and general characters identical with, although not so extensive as, that just described, was present on the right tonsil and the patient stated that it had appeared only that day. The left tonsil was inflamed but the surrounding tissues were not affected by the inflammatory action to any marked extent. The patient was sent back with directions as to treatment, but the condition becoming rapidly worse she was admitted into the Royal Infirmary under Dr. John Macintyre. From notes which Dr. Macintyre has kindly furnished I am enabled to indicate briefly the further course of the case.

On admission her fauces were much congested and a deep ulcer covered by a whitish exudation was present on each tonsil. The throat was painful and the glands of the neck were enlarged. The patient remained in the hospital on this occasion for four months. The treatment consisted at first in the administration of iron with antiseptic applications locally. After this a course of anti-specific remedies was carried out followed by tonics. Repeated bacteriological examinations of swabbings from its ulcerated surfaces were made. The first of these revealed the presence of staphylococcus and diplococcus and on examination a fortnight later the pneumococcus was found in an almost pure culture. These were the only forms of micro-organisms noted as having been found and at no time during this period could either the diphtheritic or the tuberculous bacillus be found, although six weeks after admission slight consolidation was detected at the apex of the right lung. In spite of all that could be done the ulceration spread on both sides, affecting the soft palate and the uvula.

At the end of February, 1901, four months after admission, the ulcerative process was arrested and the patient left for her home. She was readmitted on Oct 21st, 1901, nearly a year after the first onset. It was now found that food regurgitated to some extent through the nose; the posterior pharyngeal wall, the back of the naso-pharynx, the tonsils, the posterior pillars, and part of the anterior pillars of the fauces were all involved and denuded of their mucous membrane and the soft palate had largely disappeared. The tubercle bacillus was now found in the sputum. The patient died on Nov. 29th and the post-mortem examination showed that the larynx and trachea were healthy, that the left lung was adherent from tuberculous pleurisy, and that both lungs had excavations of their upper lobes and that the other lobes showed a tuberculous pneumonic infiltration.

The occurrence of the second case, so closely resembling in its local characters the first but so different in its ultimate course, naturally led me to reconsider my diagnosis in the first, and I concluded that both were illustrations of a primary gangrenous process in the tonsils. In support of this view I would refer to the report of Brindel and Raoult on Ulcerations of the Tonsil.[1] Here, under the heading of Grangrene of the Tonsil, a case seen by Brindel is quoted, the course of which, up to the time of death from a severe hæmorrhage, seems to have closely resembled the second of those which I have just noted.

From a diagnostic point of view the picture which they presented might well have been confounded with that of a tertiary specific lesion. In both instances, although the causes and processes are somewhat different, the result is the same—viz., a localised gangrene of the tissues involved. In differentiating this affection from syphilis the history of a specific infection and the fact that tertiary ulcerations of the pharynx usually begin on the soft palate or the posterior pharyngeal wall would assist in forming a decision which would be confirmed or otherwise by the result of anti-specific treatment.

When a diagnosis of primary gangrene is made the treatment adopted ought to be prompt and energetic. Iron and quinine should be administered and opium should be given freely. Locally, after cleansing the parts the electric cautery should be thoroughly applied to the ulcerated surfaces.

These cases are interesting, pointing as they do to the tonsils being a likely site for microbic infection which may set up lesions of a serious nature, and especially in those in in whom the powers of resistance are weakened. In regard to the study of such acute septic inflammations of the throat Sir Felix Semon did good service when he argued for their pathological identity.[2] There may be, and probably are, factors we know nothing of which determine the type of the pathological process, be it gangrene, erysipelas, œdema, &c.,

[1] Des Ulcérations de l'Amygdale; Rapport par MM. les Drs. Brindel et Raoult. Bulletins et Mémoires de la Société Française d'Otologie, de Laryngologie, et de Rhinologie, tome xvi., 1re partie.

[2] On the Probable Pathological Identity of the Various Forms of Acute Septic Inflammation of the Throat and Neck, by Sir Felix Semon, Transactions of the Royal Medical and Chirurgical Society, vol. lxxviii.

but as far as our knowledge takes us we have to regard this determination as depending more on some adherent peculiarity of the tissues than on the particular form of micro-organism that is present.

Glasgow.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF TABES MESENTERICA WITH INTENSE PIGMENTATION OF THE SKIN.

BY WALKER OVEREND, M.A., M.D. OXON.,
LATE SENIOR PHYSICIAN TO THE TOTTENHAM HOSPITAL.

THE patient was a girl, aged two and a half years, who began to suffer at the end of 1901 from a severe attack of pertussis. During the progress of the disease abdominal tuberculosis gradually developed. In the middle of January, 1902, the abdomen was thin, flaccid, and deeply pigmented. On palpation a lump was readily felt just inside the left external iliac spine and a smaller one a little higher up in the neighbourhood of the left kidney, close to the spine. There was neither liver dulness nor ascites and the lungs were normal. Pigmentation was distributed over a large part of the body but most deeply over the left side of the abdomen. Above it reached to the level of the nipples and then faded off towards the neck. This discolouration was almost symmetrical. It existed along the front and inner aspect of each thigh and leg as far down as the ankle. On the back the bronzing formed a zone reaching from the eighth dorsal spine to the level of the head of the femur. The axillæ were pigmented and an area of discolouration extended along the inner side of each arm as far as the elbow. The prognosis appeared exceedingly grave but now after an interval of four months the pigmentation has faded until it is almost imperceptible and the lumps have disappeared. There is still, however, a doughy feeling in the abdomen and the little girl continues exceedingly thin in spite of a ravenous appetite.

The bronzing was apparently due to the pressure of enlarged mesenteric glands on the left suprarenal body. A similar instance is recorded[1] where after death enlarged glands were found pressing upon the left suprarenal body without involving its structural integrity.

Clacton-on-Sea.

ACUTE DERMATITIS CAUSED BY COTONEASTER MICROPHYLLA.

BY HARRY J. COOPER, M.A., M.B. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
LATE CLINICAL ASSISTANT IN THE HOSPITAL FOR DISEASES OF THE SKIN, BLACKFRIARS, AND IN THE SKIN DEPARTMENT, ST. THOMAS'S HOSPITAL.

THE following cases seem to me to be worthy of publication as I can find none on record due to poisoning by *Cotoneaster microphylla*, in addition to which the plant is a common one in gardens, but probably not usually so extensively grown as in the grounds from which the cases in question emanated. In these grounds there is a pergola over a 100 yards in length covered by this plant, besides some low walls over which it is grown. This extensive growth of the plant necessitates care from time to time in the way of clipping. In two of the cases now under notice the patients came to me at the same time just after one of these clippings.

CASE 1.—On Dec. 17th, 1897, a gardener, aged 33 years, came to me with a raised patch on his right wrist, rather larger than a five-shilling piece, the edges having an urticarial appearance; the centre of the patch was covered with exuding points; in addition there was an erythematous condition of the forehead with papules on the hands and thighs accompanied with much irritation. On the 19th the original patch on the wrist was four inches across and was still raised, with a white areola surrounded by a red one; some of the exuding points had by this time become scabbed over. The papules on the thighs were now more urticarial in appearance; the eyelids and forehead much swollen. The man's tongue was clean, his pulse-rate was 72, and his temperature was normal. These symptoms gradually subsided and he was practically well in 10 days.

CASE 2.—I saw the second patient on Dec. 17th. His cheeks were red and inflamed-looking; his left arm was red and swollen, with some raised patches, as in Case 1. On the 19th his left forearm was much swollen, measuring two inches more in circumference than the right arm, and was bright red in colour. There were raised papules on his thighs, his eyelids and face were much swollen, and he complained of great irritation. His temperature and pulse-rate were normal. This patient did not fully recover till Dec. 31st.

CASE 3.—On Dec. 19th I saw a third patient, a man who had been working with the other two sufferers, but he had only a few papules on the hands.

The head gardener tells me that there have been slight cases since these, after clipping this plant, in spite of the men wearing gloves and keeping their sleeves turned down, and that they quite dread the work. I have examined microscopically leaves of the plant and I find the under surface to be thickly covered with filiform white hairs, having a sharply pointed free extremity with a bulbous expansion where they spring from the leaf. On bruising the leaf in contact with litmus paper an acid reaction is obtained.

The treatment was chiefly local, as there was practically no constitutional disturbance and it consisted in the application of lotions to relieve the irritation which was the worst feature in the cases. It appears to me from the above that there can be no doubt that this plant was the cause of the eruption, especially as the condition had not the appearance of any common skin disease and was most intense on the hands and arms which would mostly come in contact with the plant. No doubt the face and thighs were principally inoculated by the hands, as suggested by Dr. H. R. Crocker in his account of poisoning by *Rhus venenata* and *Toxicodendron*. I imagine that the hairs of this plant, like those of the nettle, secrete an acrid juice and thus cause the inflammation.

Lyme Regis.

NOTE ON A CASE OF PRECOCIOUS CONCEPTION WITH SUBSEQUENT DELIVERY AT FULL TERM.

BY JAMES MILNER, M.R.C.S. ENG., L.R.C.P. EDIN.

ON May 11th, at 5.40 A.M., I was called to attend a girl, aged 14 years, six weeks, and four days, who was said to be in labour. Upon my arrival I was told that the child (which was giving audible proof of an independent existence) had been born some 20 minutes. After ligaturing and dividing the cord the placenta was expressed without difficulty. Upon examining the child I found it to present the signs of maturity and to be quite up to the average size. I was unable at the time to weigh and to measure the infant, but I did so when it was three days old, the result being: weight, 6¾ pounds; length, 18½ inches (approximately); fronto-occipital circumference, 13¼ inches; and mento-occipital circumference, 14¼ inches. Probably the weight at birth would be somewhat greater than above stated, for in addition to the usual loss during the first few days there must be taken into account persistent vomiting of the condensed milk given by the nurse in preference to the abundant available maternal supply which early made its appearance.

The subsequent history was uneventful but the progress of the labour was remarkable when the tender age of the mother is considered. The girl said that slight pains which she mistook for stomach-ache began about 10 P.M. on the previous day, but no one was disturbed until 4 A.M. on May 11th when the patient's mother thought that labour was setting in. She, however, thought the pains too slight to take much notice of until about 5.30 A.M., when she sent for me and the child was born before the messenger could leave the house.

The patient's height is 56¾ inches and from her general appearance and development she would not be thought to be older than she actually is. Menstruation began at about

[1] Brit. Med. Jour., Sept. 30th, 1893, p. 741.

12½ years of age, but the pubes is still devoid of hair, and the only apparent sign of such an event as is here recorded having taken place is the fully-developed milk-laden distension-striated breasts which contrast very oddly with the general appearance of the child-mother.

The cases of full-term labour in mothers of an earlier age than here stated, quoted in works on forensic medicine, are not numerous, for although such premature assertion of their reproductive powers is not uncommon in females of other and warmer climes, such instances are not so common in this country but that they are worthy of being recorded when they do occur, and it would be of interest to know the (verified) age of the youngest mother in this country who has unaided effected the delivery of a full-term living child and without laceration of the perineum, conditions which obtained in this instance.

The case ought to have formed a subject for the criminal court, but upon investigation by the police an offence within the legal time-limit as required by the Criminal Law Amendment Act could not be proved.

Shipdham, Norfolk.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF CIRRHOSIS OF THE LIVER TREATED SURGICALLY BY THE ESTABLISHMENT OF A COLLATERAL CIRCULATION.

(Under the care of Dr. W. MURRELL.)

THE attempt to treat portal congestion by the establishment of a collateral circulation is based on reasonable *a priori* considerations, and as in a certain number of cases the operation has proved successful it now remains only to determine the most suitable cases for the operation and the best method of inducing the formation of collateral vessels. The copious bibliography which Dr. Murrell has appended should prove of value.

A married woman, aged 48 years, was admitted into Westminster Hospital on Oct. 7th, 1901, complaining of enlargement of the abdomen of four months' duration. She had suffered from morning vomiting for six months, the vomited matter often being streaked with blood. There was no definite alcoholic history and there was no peripheral neuritis. In all probability she had had syphilis. She had had 17 children, of whom 11 were living. She had had various miscarriages at two, three, and seven months, and there was the scar of an ulcer over the left tibia for which she had been treated in the hospital in 1897. On admission the abdomen measured 42 inches at the umbilicus and contained much fluid. The liver dulness could not be mapped out with certainty. She was given five grains of iodide of potassium three times a day for a week and then the dose was increased to 15 grains three times a day for a fortnight, but from this she derived no benefit. Two days after admission paracentesis was performed and six pints and 15 ounces of pale, straw-coloured fluid were drawn off. After the tapping the abdomen at the umbilicus measured 36 inches but the fluid speedily reaccumulated and on the 29th the abdomen measured 42½ inches. On that day under gas and ether an incision was made half-way between the umbilicus and the pubes, and a large glass tube having been introduced 14½ pints of serous fluid were syphoned off, much more, however, subsequently escaping. Mr. W. G. Spencer then made another incision two and a half inches in length in the median line above the umbilicus. The abdominal cavity was explored with the finger and the liver was found to be hypertrophic, hard, not very nodular, and covered with lymph. A portion of the omentum was drawn out and stitched with four kangaroo tendons to the abdominal wall. The stitches were removed on the twelfth day and the tube was withdrawn from the lower opening. The patient was able to get up on Nov. 22nd and on the 26th there was very little fluid in the abdomen which measured 36 inches. She was discharged on the 30th, a month and a day after the operation.

On Dec. 24th the patient was readmitted with some return of the ascites. She stated that she had been in fairly good health and had been able to perform her duties. Her temperature was 102° F. and she measured 46½ inches at the umbilicus. She was suffering from bronchitis, for which she was given a mixture of chloride of ammonium, carbonate of ammonium, and iodide of potassium flavoured with liquid extract of liquorice. The back was painted with equal parts of the tinctura and liquor iodi fortis and she had inhalations of pure terebene and pinol. At the expiration of 10 days the bronchitis had disappeared and an attempt was made to promote the development of the superficial blood-vessels in the wall of the abdomen—(1) by chloroform poultices made by sprinkling a couple of drachms of chloroform on several thicknesses of lint; (2) by rubbing in unguentum capsici; and (3) by the local application of oleum cajuputi. The cajuput in addition to acting as a counter-irritant was evidently absorbed and gave much relief to the accompanying flatulence. It was thought advisable to keep the bowels well opened by the administration of a drastic purgative. The compound jalap powder was given in drachm doses every morning but was found to be uncertain and unsatisfactory in its action. Turpeth, the *Ipomœa Turpethum* of the Indian and Colonial Addendum (1900) to the British Pharmacopœia, was then substituted and answered admirably. The official dose of the powder is from five to 20 grains but it was necessary to give the maximum quantity in order to obtain a satisfactory action; this usually produced five or six copious watery motions. On this treatment the patient very greatly improved and on March 18th, 1902, it was found that the superficial veins of the abdomen were much enlarged and the circumference at the umbilicus had fallen to 42 inches. The appetite was good; the urine was abundant in quantity and was free from albumin and sugar. The patient continued to make satisfactory progress, being able to get up for some hours every day until April 1st, when the temperature rose to 102·8°, evidently as the result of some localised peritonitis, and continued high for some days. The inflammation soon subsided and good progress was again made until the 27th, when there was another rise of temperature with a considerable increase in the amount of ascites. The patient was tapped on the 29th and 23 pints of straw-coloured fluid, having a specific gravity of 1015, were drawn off. The patient was relieved temporarily but she gradually became weaker and died on May 7th.

Necropsy.—At the post-mortem examination (which was performed by Mr. E. Rock Carling) the body was found to be fairly well nourished. There was a scar of an old surgical wound in the mid-line three inches above the umbilicus. On opening the abdomen there was found recent peritonitis of a fibrinous character matting together the intestines and giving rise to easily separable adhesions of the viscera generally to the abdominal wall. The abdominal cavity contained some pints of turbid fluid, whilst along the course of the descending colon there was viscid, yellowish pus; there was also evidence about the diaphragmatic surfaces of the spleen and liver of old peritonitis with thickening of the capsules and there were a few close and tough adhesions. The liver was firmly attached to the abdominal wall in the epigastric region, the intervening tissue, as was also the falciform ligament, being unusually vascular. Stretching across the abdominal wall from side to side, three and a half inches above the umbilicus, was a band of tissue, apparently organised inflammatory material, vascular, chiefly separable by the fingers, but at the extremities consisting of vessels some of which were as large as a quill and were continued from vessels in the great omentum. The omentum had thus established close connexion with the wall laterally and was slightly adherent in the middle of its extent, but the recent peritonitis made it difficult to say how much of this was of old standing. The liver (weight two pounds and nine ounces) was small, densely fibrotic, and traversed by trabeculæ. There were indications of perihepatitis. The spleen had a thickened capsule and there were indications of recent perisplenitis; it weighed 16 ounces. The kidneys weighed 10 ounces; they were lobulated, the cortex was cloudy, and the capsules were adherent. The heart weighed 10 ounces; the left ventricle was slightly dilated and hypertrophied. The aortic valve held water; the cusps were normal. The mitral valve was somewhat

sclerosed; the chordæ tendineæ were short and thick. The right ventricle and valves of the right side were normal.

Remarks by Dr. MURRELL.—The Drummond-Morison operation has been performed so frequently that it can no longer be regarded as a curiosity. The above case is of interest as an illustration of the subsequent treatment adopted. It was a fairly good case for operation but the conditions were not unexceptionable. For example, the patient was subject to bronchitis and for some days after admission her temperature was 102·6° in the evening. The urine had a specific gravity of 1030 and although usually free from albumin it sometimes contained a trace. She had a faint apex systolic murmur heard most plainly at the ensiform cartilage. Her arteries were not rigid and a strong point in her favour was that she was cheerful and good-tempered. Her blood was examined on May 3rd and it was found that the red blood corpuscles numbered 5,670,000 and the white 10,200 per cubic millimetre, the hæmoglobin value being 95 per cent. The counter-irritation applied to the abdomen in the manner already described was distinctly useful and the turpeth answered so well that it is somewhat surprising that it is not more commonly prescribed. There is reason to think that the operation materially prolonged the patient's life and had it not been for the frequently recurring attacks of bronchitis the result might have been still more favourable.

S. Talma of Utrecht suggested the establishment of a collateral circulation in the treatment of cirrhosis of the liver in 1887 or 1888 but published nothing on the subject until some years later. Van der Meulen performed the operation in 1888 and the patient died in a few hours from shock. Schelky made an attempt in 1889 and the patient died on the fourteenth day from peritonitis. These cases were not published. Th. Lens[1] of Paramaribo operated on a negro, aged 61 years, on June 6th, 1891, and the patient lived for nearly six months. A necropsy was made and the paper is illustrated by two reproductions from photographs showing the post-mortem appearances of the organs. The article, although reprinted in pamphlet form, attracted but little attention. Dr. David Drummond of Newcastle-on-Tyne independently conceived the idea of the operation and it is to him and to his colleague Mr. J. Rutherford Morison that we are indebted for the suggestion in a form to ensure its general adoption and for placing the procedure on a firm scientific basis. Mr. Morison's first operation was on Sept 3rd, 1894,[2] his second was on Oct. 22nd, 1895,[3] and the third was on Jan. 12th, 1897.[4] Dr. H. Campbell Thomson in a paper read before the Royal Medical and Chirurgical Society[5] states that the operation was first introduced into this country by Morison and Rutherford, but the only Rutherford of whom I can find any mention in this connexion is Mr. Rutherford Morison. Talma[6] has published two papers dealing with the operation, one in 1898 and the other in 1900. He appears not to have been the actual operator but to have delegated the duty to his colleagues, von Eiselsberg and Narath. Alfred Egon Neumann[7] of Berlin on Nov. 2nd, 1898, operated on a woman, aged 45 years, with an alcoholic history, who presented an abdomen distended with fluid and a liver which was hypertrophied, hard, and smooth. In the following January she was gaining flesh, the liver was smaller, there was no ascites, and there were well-developed veins about the umbilicus. Neumann considers that we should always bear in mind Talma's requirement that the liver cells be not too greatly impaired in their functional capacities and that every precaution should be taken in selecting proper cases so that discredit may not fall on so valuable an operation. On Nov. 4th, 1898, Robert F. Weir[8] of New York operated on a man, aged 43 years, a wine-taster, with a much enlarged liver and spleen. The omentum was stitched on each side of the abdominal wound with catgut sutures and in addition the antero-superior surface of the right lobe of the liver, the corresponding diaphragmatic part of the peritoneum, and the parietal peritoneum adjoining the wound were freely scraped with the point of a steel hat-pin. The patient died on the fifth day and at the necropsy extensive peritonitis was found, especially in the pelvis. Dr. H. D. Rolleston and Mr. G. R. Turner[9] have recorded two cases operated on at St. George's Hospital, both in July, 1899. F. Tilden Brown[10] on Sept. 2nd, 1899, operated on a man, aged 43 years, who had been a habitual user of alcohol for many years, chiefly in the form of whisky. A five-inch incision was made between the ensiform cartilage and the umbilicus, and a two-inch incision above the symphysis pubis. Through the lower wound a glass tube one and a quarter inches in diameter was passed into the pelvis behind the bladder. Capillary drainage was provided for by sterile gauze led through the tube. Vomiting was troublesome for the first 48 hours but was controlled by champagne. The patient made a good recovery. In November, 1899, Grinon[11] operated on a woman, aged 47 years, with good results, there being a marked venous development on the abdominal wall, and in the following year Bossowski[12] performed the operation on a girl, nine years of age, the subject of cirrhotic liver. On July 25th, 1900, Charles H. Frazier[13] essayed the operation under a local anæsthetic, but after opening the peritoneal cavity the manipulation caused so much pain that ether had to be administered. Frederick A. Packard and Robert G. Le Conte[14] of Philadelphia operated on two cases, both on Oct. 13th, 1900. Their paper is interesting and to it is appended a list of 22 collected cases. Mr. C. W. Mansell Moullin[15] operated in five cases. Two of the patients died, one from pleurisy four weeks after the operation and the other one week after the operation from exhaustion. The other three patients were discharged relieved; one was lost sight of and the other two were alive and well two years after. Amongst the more recent contributions to the subject may be mentioned a valuable paper by Professor H. Ito and Dr. K. Omi[16] of Japan in which they record their own personal experiences in five cases and append a bibliography of no less than 75 references. George Emerson Brewer of New York[17] operated on four cases. In the first, that of a woman, aged 56 years, suffering from cirrhosis and ascites, the upper surface of the small nodular liver and the outer surface of the spleen, together with the opposing parietal peritoneal surfaces, were vigorously rubbed with sterile gauze until they bled freely. The peritoneum on each side of the abdominal wound was also rubbed in the same way and the omentum was drawn down and firmly held in contact with the denuded surface by means of sutures which closed the abdominal wound. She died two days later from uræmic coma. The second operation was on a woman, aged 48 years, with cirrhosis and ascites. The mode of procedure was practically the same as in the previous case, but there was a good deal of oozing of blood from the surface of the liver and spleen and the patient died in less than 24 hours. The third case was that of a man, aged 40 years, and he died at the end of five days from peritoneal sepsis. The fourth case was in a man, aged 30 years, with a small, hard, nodular liver and a much enlarged spleen. He died a week after the operation from peritonitis. The last case was in a man, aged 40 years, who had tuberculous consolidation at the left apex with cirrhosis of the liver and ascites. It was apparently a very unfavourable case but he made a good recovery. The author seems to have been unfortunate, there being four deaths out of five cases, but possibly the cases were not selected with sufficient care. To this paper is appended a list of 60 cases in which the operation was performed, but as the information was obtained for the most part from private sources and as references are not given it is difficult from them to arrive at any conclusion as to the value of the operation.

These are all cases of cirrhosis of the liver with a more or less definite history of alcoholism, but in addition Mr. J. Warrington Haward[18] of St. George's Hospital in August, 1897, operated on a woman, aged 49 years, the subject of calcification of an adherent pericardium with enlargement of the liver from chronic congestion. The relief was temporary and the patient died a year later. Dr. W. Ewart showed the specimen at a meeting of the Harveian Society on April 6th, 1899. On Feb. 20th, 1900, Mr.

[1] Weekblad Nederlandsch Tidsch. v. Geneeskunde, May, 1892.
[2] Brit. Med. Jour., Sept. 19th, 1896.
[3] THE LANCET, May 27th, 1896, p. 1427.
[4] THE LANCET, May 27th, 1899, p. 1426.
[5] Transactions of the Royal Medical and Chirurgical Society, 1901, p. 280.
[6] Berliner Klinische Wochenschrift, Sept. 9th, 1898, and No. 31, 1900.
[7] Deutsche Medicinische Wochenschrift, June 29th, 1899.
[8] New York Medical Record, Feb. 4th, 1899, p. 149.
[9] Transactions of the Medical Society of London, vol. xxiii., 1900, p. 63.
[10] Medical and Surgical Report of the Presbyterian Hospital, New York, vol. iv., 1900.
[11] Société Médicale de Hambourg, Jan. 16th, 1900.
[12] Centralblatt für die Grenzgebiete der Medicin und Chirurgie, 1900, Band iii.
[13] American Journal of the Medical Sciences, December, 1900, p. 661, and Annals of Surgery, June, 1901, p. 715.
[14] American Journal of the Medical Sciences, March, 1901.
[15] THE LANCET, Oct. 19th, 1901, p. 1046.
[16] Deutsche Zeitschrift für Chirurgie, December, 1901.
[17] New York Medical News, Feb. 8th, 1902.
[18] Brit. Med. Jour., April 15th, 1899, p. 908.

Spencer operated on a patient of mine suffering from Banti's disease. The details of this case have already been published.[18] Pal of Vienna in March, 1902, exhibited at the Gesellschaft der Aerzte two patients operated on by "Tamma's method," in which cocaine was employed as an anæsthetic. Both recovered although one had an epileptiform fit with hemiparesis and hæmatemesis. Frunk at the same meeting stated that he had performed seven operations recently for cardiac trouble associated with cirrhosis, using in each case Schleich's anæsthesia. He frequently found the omentum greatly shrunken so that a wide area had to be brought into contact with the abdominal wall in order to obtain the necessary anastomosis. In one case he connected the appendices epiploicæ with the large intestine and the patient did well.

It is difficult to say how many cases have been operated on and what is the percentage of recovery. Brewer states that of 59 cases there were 22 deaths and 37 recoveries. M. L. Harris[20] as the result of a study of 48 cases including two of his own, arrives at the conclusion that there was a recovery in 13 per cent. of the "alcoholic cases" and in 15 per cent. of the "mixed cases." Much depends on careful selection and the best results would probably be obtained in the pre-ascitic stage when the diagnosis rests on the alcoholic history with hæmatemesis and enlargement of the liver and spleen.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

A CASE OF PNEUMOCOCCAL ARTHRITIS.

(Under the care of Dr. G. R. MURRAY.)

THE pneumococcus, though generally confining its activities to the lungs, is capable of affecting other parts of the body. An arthritis is probably the most frequent condition produced and may reasonably be looked upon as pyæmic in nature. The severity of the affection of the knee is undoubtedly associated with the antecedent lesion by which the resisting power of the joint has impaired. For the notes of the case we are indebted to Dr. N. McCall Smith, late junior house physician.

A male, aged 42 years, was admitted into the Royal Infirmary, Newcastle-on-Tyne, under the care of Dr. Murray on Jan. 30th, 1901, complaining of pain in the chest and right leg of six days' duration. A fortnight previously he hurt his right knee but was able to work with only slight pain until seized with the present illness. On admission the pulse was 98 and somewhat irregular, the respirations were 44, and the temperature was 103° F. He lay flat on his back in bed. His face was flushed and bloated, his eyes were bright and congested, and his expression was anxious. There was a slight restrained cough. The tongue was red and dry and he complained of thirst. The right leg, knee, and thigh were greatly swollen and red. The leg felt "boggy" and pitted deeply on pressure. There was some streaky hyperæmia of the skin of the thigh. He also complained of pain in the right shoulder. There was no marked swelling of this joint but there were tenderness on pressure and great pain on movement. On examination of the chest the following condition was found. The respirations were hurried and shallow, the left side of the chest being almost motionless. Increased tactile fremitus was present on palpation over the lower lobe of the left lung posteriorly. A friction rub was felt over parts of the same area. Over the left base posteriorly and as high as one inch above the angle of the scapula the percussion note was flat. This extended forwards as far as the anterior axillary line. The other parts of the chest were practically normal. On auscultation the breath-sounds were bronchial in character over the dull area. There were some friction sounds and a few clicking râles towards the base. Over the other lung the breath sounds were somewhat coarse and exaggerated.

On Jan. 31st, there was, and had been, no sputum. The exploring needle was inserted into the knee-joint but no pus was found. A little fluid, mostly blood, was withdrawn. A film prepared from this and stained with carbol-fuchsin showed numerous capsulated diplococci. On the previous night the patient, not having slept for two nights and being in great pain, was given a quarter of a grain of morphia hypodermically and he slept well. On Feb. 1st the respirations were laboured and the pulse was 114, of low tension, and approaching in character to the "water-hammer" pulse. Later in the day the first sound became inaudible. On the 2nd, under the influence of repeated hypodermic injections of strychnine, his condition had improved. The consolidation was now limited to a small portion of the upper part of the lower lobe of the lung. The redness and swelling of the leg were extending up the thigh and the pain was very great in the knee. The condition was being treated with opium fomentations. On the 3rd there was blood-stained expectoration for the first time. On examination this was found to be crowded with capsulated diplococci. No consolidation was left except in the upper quarter of the left lower lobe. Redux crepitations were present over most of the lobe. There was distinct fluctuation in the right knee-joint. The exploring needle was inserted and thick creamy pus was withdrawn. The pus on examination was found to contain many capsulated diplococci. The joint was opened and the drainage-tube was passed through, no anæsthetic being given. During the following week the patient was in a critical condition. On the 10th the knee-joint was still discharging pus copiously. There were signs of abscess formation on the outer surface of the middle of the right thigh, deep fluctuation being felt. The same could be made out on the outer surface of the middle third of the right leg. On incision into these regions large quantities of creamy pus escaped. On examination the pus in both instances contained swarms of capsulated diplococci. The lung condition had quite cleared up except for some moist sounds. On the 17th there were signs of the right ankle-joint being attacked. The patient was complaining of great pain and the joint was swollen and red. The general condition was still bad. The pulse was 102, irregular, and of low tension. He had muttering delirium at night. The temperature was of a septic type. On the 19th the ankle-joint was incised behind the internal malleolus. Creamy pus escaped and was found to contain numbers of capsulated diplococci. The other incisions were still discharging. The drainage-tube was entirely removed from the knee. On the 26th the patient's condition was practically unchanged. No new focus of suppuration could be found to account for his condition. On March 4th the temperature was still raised and the mental condition was fogged. The lung was quite clear and no new focus of suppuration could be found. On the 8th the right leg had been fomented with boric lint for the last two days. All incisions were doing well, except the one in the middle third of the leg which did not seem to drain properly. On the 15th there were signs of a deep abscess in the muscles of the right calf. There was no definite fluctuation. On the 17th deep fluctuation could be made out in the right calf. On incision about half a pint of pus escaped. A large drainage-tube was inserted. On examination the diplococci were found as before. From the 17th to the 26th the temperature was never above 99°. On the 26th the tube was still in the calf. The patient was quite clear in his mind, the appetite was good, and he was doing very well.

It may be added that subsequently the patient became tired of being in the hospital and insisted on going home. When last seen as an out-patient he was quite well except for some ankylosis of the joints.

Remarks by Dr. MCCALL SMITH.—The above case presents many points of interest.

1. As to treatment. Opinions seem to be divided as to the advisability of giving morphia after the initial stages of the disease. I think that in this case it was necessary owing to the fact that the patient had had no sleep for 48 hours on account of the severity of the pain in the knee. If sleeplessness in a case of pneumonia is due simply to the effects of the fever, then I think some other hypnotic such as paraldehyde (from one drachm to two drachms) ought to be used. In other words, morphia should only be used in the later stages when there is a definite pain to be subdued.

2. As to the date of onset of the arthritis. This cannot be absolutely fixed but the history of injury a fortnight before his illness gives some colouring to the idea that the arthritis was the primary lesion in this case. The analogy of tuberculous joint disease also favours this view. The condition of the patient's leg on admission shows that there must have been trouble there for some days at least. Against this is the fact that he was able to work till the onset of his illness with only slight pain and the onset was that of a typical pneumonia. Personally, I am inclined to think that the

[18] THE LANCET, June 16th, 1900, p. 1725, and April 26th, 1902, p. 1177.
[20] Journal of the American Medical Association, May 3rd, 1902.

patient was suffering from an acute general infection by the pneumococcus.

3. As to the difference of virulence in different lesions. This is striking and shows how little is required to alter the virulence of organisms. In the shoulder there was a simple arthritis, almost like a rheumatic infection, which passed off in a few days. In the knee, which had sustained a slight injury, there was purulent arthritis, the injury having so changed the tissues of the joint that they became a suitable soil for the pneumococci on which they were able to flourish and to reach their maximum virulence and whence they invaded the other tissues of the leg. In the lung we find an ordinary pneumonia which ran a normal course and would not have been dangerous to life *per se*.

4. As to the history of injury. This is definite and the injured part was the first to suppurate. It would be interesting to note in how many of these cases a definite history of injury could be obtained. Among the seven cases published by Dr. N. Raw[1] there is only one in which the previous history gives any clue. In that one there is a history of rheumatism.

5. As to multiplicity of lesions. The number and position of the abscesses are interesting. First the knee was affected; then the thigh was attacked, the organisms being conveyed by the lymphatics. The streaky hyperæmia noted points to this. Then the leg began to show signs of the formation of an abscess; later still the ankle was attacked and last of all another abscess was formed in the leg. I think that the spread of the disease downwards was due to infection spreading along thrombosed veins. The lymphatics are out of the question. Metastasis is unlikely, for if that had been the means, then there ought to have been purulent foci in other parts of the body.

6. As to bacteriology. The feature of interest here is the fact that the only organism that could be demonstrated both in the sputum and the pus was a capsulated diplococcus answering in all particulars to the pneumococcus of Fraenkel. A pure cultivation was obtained from one of the abscesses in the leg and inoculation of a rabbit with the cultures so obtained caused septicæmia. Numerous diplococci were found in the rabbit's blood. The characters of this septicæmia were identical with those of the septicæmia produced by Fraenkel and Weichselbaum by injecting the sputum of pneumonic patients into rabbits.

The case is published by kind permission of Dr. Murray whom I have also to thank for furnishing me with the results of the inoculation of the rabbit.

[1] Brit. Med. Jour., Dec. 21st, 1901.

Medical Societies.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Report of the Committee appointed to Draw up Recommendations as to Compulsory Examination of Hearing-power of School-children.—Exhibition of Cases and Specimens.

A MEETING of this society was held in Dublin on May 31st. By the kind permission of the Rev. the Provost the meeting was held in the Anatomical Department of the Medical School of Trinity College and was also attended by Fellows of the Royal Academy of Medicine and other members of the medical profession. The chair was taken at 11 A.M. by the President, Dr. URBAN PRITCHARD.

A report of the committee appointed on April 14th to draw up recommendations with regard to the compulsory examination of the hearing-power of school-children was presented and unanimously adopted. The following is the text of the report:—

To the Otological Society of the United Kingdom.

GENTLEMEN,—Your committee appointed to consider the desirability of securing for the children of the poorer classes systematic detection and treatment of ear disease and to report at an early date to the society, having carefully considered the reports submitted and the experiences recorded at the special meeting held on April 14th, have arrived at the following conclusions: 1. That there exists amongst the children of the poorer classes a very large amount of ear disease which is preventable and curable. 2. That it is not sufficiently recognised that ear disease in childhood tends to a considerable loss of hearing, health, and life, that it militates against a child's education, and that later on the subjects of it are seriously hampered in their life's work and often incapacitated for the services of the State. 3. That ear disease in children is often not treated, partly owing to neglect, partly to ignorance and to belief in popular fallacies, but more especially to an inability on the part of parents and teachers to detect it. 4. That any scheme having for its object the security of children against the consequences of ear disease to be efficient must provide for thorough and systematic examination and treatment. 5. And, lastly, having regard to the national importance of the subject, we recommend that a memorial embodying this report be submitted to the President of the Committee of the Council on Education.—Signed by URBAN PRITCHARD (President), ARTHUR H. CHEATLE, H. MACNAUGHTON-JONES, W. PERMEWAN, and WILLIAM MILLIGAN and W. JOBSON HORNE (honorary secretaries).

Clinical cases were exhibited by Professor STORY, Dr. DEMPSEY, and Mr. R. H. WOODS.

A communication was read from Dr. MACNAUGHTON JONES giving the notes of a case of Double Perforation of the Membrana Tympani by Lightning.

Professor CUNNINGHAM gave a lantern demonstration of the Central Connexions of the Cochlear Nerve in the Orang, Chimpanzee, Gibbon, and Man.

Professor COFFEY demonstrated the Nerve-endings in the Ventral Cochlear Nucleus, the Superior Olive, and the Trapezoid Body.

Dr. DEMPSEY showed microscopic slides of the Membranous Labyrinth.

The PRESIDENT showed lantern slides of Microscopic Sections of the Internal Ear.

Mr. A. H. CHEATLE exhibited specimens of Temporal Bones showing the Petro-squamosal Sinus.

Dr. W. JOBSON HORNE showed preparations demonstrating the Formation of an Abscess Sac at the Site of the Saccus Endolymphaticus.

The visiting members were entertained most hospitably by their Dublin *confrères* and the meeting from the scientific aspect, and in every respect, was an important and successful one.

Reviews and Notices of Books.

Lehrbuch der Nervenkrankheiten für Aerzte und Studirende. (*Text-book of Nerve Diseases for Practitioners and Students.*) By Professor Dr. H. OPPENHEIM. Third Edition. Berlin: S. Krager. 1902. Super roy. 8vo, pp. 1220, 369 Illustrations. Price 27*s.* net.

THE three years which have elapsed since the publication of the second edition of Dr. Oppenheim's book have seen no striking change in our conception of diseases of the nervous system as a whole; no great discovery has been made to alter our views of the nature of these affections, nor have we learned much as to their treatment; and yet this period has been far from unfruitful. A good deal of useful "spade work" in the shape of the accumulation of observations has considerably widened the details of our knowledge both of the physiology and pathology of the nervous system. Dr. Oppenheim's book has expanded *pari passu* with the increased supply of material. The 985 pages of the second edition have grown to 1220 pages in the volume before us, while the number of illustrations has increased from 287 to 369; it has at the same time been thoroughly revised and brought up to date. The general plan of the book remains unaltered. With a view to supply the needs of the practitioner and student special attention has been paid to symptomatology, diagnosis, prognosis, and treatment, only so much pathological anotomy having been introduced as is necessary to a clear understanding of the clinical features of the various morbid processes.

The book is divided into two parts, the first of which is devoted to the general symptomatology of nerve diseases and to the methods of examination which are commonly employed. Succinct but comprehensive directions are here given for examining muscular movements, reflexes, vasomotor, trophic, and secretory disturbances, and the other channels through which morbid conditions of the nerves manifest themselves. The actions of the different muscles and groups of muscles are given in some detail with capital photographic illustrations of the attitudes which are assumed in paralysis of them. The investigation of the electrical

reactions of muscles and nerves, a subject which the student often finds one of difficulty in practice, is fully described. The second part is subdivided into six sections. In the first of these are discussed diseases of the spinal cord, in the second those of peripheral nerves, in the third those of the brain, and in the remainder neuroses, affections of the sympathetic, and intoxications which particularly influence the nervous system. The consideration of each of these sections is prefaced by a short account of the normal physiology and histology of the parts concerned and the effects of different kinds of lesions are indicated briefly.

In his introduction to the diseases of the spinal cord the author alludes to the attack on the "neuron theory" recently made by Apáthy and Bethe. Dr. Oppenheim is of opinion that the commonly accepted view of the neuron as a histological entity may have to be enlarged but that there is no reason to doubt the general truth of the theory. In considering the symptoms produced by injuries of the cord Dr. Oppenheim discusses the cause of the hyperæsthesia of the paralysed limb in Brown-Séquard's paralysis and adds yet another theory to those which have been advanced to account for it. Peripheral sensory stimuli on reaching the cord divide into two components, one of which passes up on the same side to a subcortical centre (not giving rise to sensation), while the other is conducted through the opposite side to a sensory area. A one-sided lesion, barring the passage of the former, diverts it to the path pursued by the latter which, thus reinforced, produces an exaggerated sensation on reaching the cortex. It is an ingenious theory though it does not quite solve the whole problem.

The author's descriptions of the diseases of the nervous system are lucid and graphic. The commoner forms are adequately dealt with while the rarer varieties receive more attention than is usually paid to them in ordinary text-books, a feature of this work which adds greatly to its value for purposes of reference. There is, perhaps, a tendency to make the subject a little too easy. The maladies as described in the book do not display that reluctance to arrange themselves according to types which they are apt to exhibit when met with in real life. However, in a text-book this is to some extent unavoidable and we are bound to say that an unusually large number of anomalous and atypical cases are mentioned in the appendices to the various sections.

With regard to the view which has been advanced that locomotor ataxy is primarily an affection of the posterior roots the author offers no opinion one way or another. In the matter of treatment he has found Frenkel's system of exercises in coördination useful but he warns us not to expect too much from it. While Erb strongly recommended the exhibition of mercurials in tabes Dr. Oppenheim finds them useless in the majority of cases and, rightly as we think, only gives them when they are specially indicated. Galvanism should be tried in every case and its use persevered in for several months. In cases of incontinence of urine he has had striking results from internal faradisation of the sphincter vesicæ. In the treatment of the sequelæ of acute anterior poliomyelitis stress is laid on the value of transplantation of tendons in cases where the joints of the extremities are affected by localised paralyses. This operation might be performed with benefit much more frequently than is generally realised. A page in this section is devoted to the subject of periodical paralyses of the extremities. Some of these are associated with malaria and are relieved by quinine, others are not malarial. The author mentions the case of a boy, aged 13 years, who on recovering from scarlet fever began to suffer from attacks of paralysis which came on at first about once a fortnight. The patient is now grown up and married but still suffers from this curious complaint.

In the next two sections are discussed diseases of the peripheral nerves and those of the brain. In regard to bulbar paralyses, a satisfactory classification does not yet seem to be within sight. Besides the ordinary varieties the author mentions several very interesting forms. In one case he saw bulbar symptoms, the nature of which remained unexplained, in connexion with an attack of laryngismus stridulus. He also refers to three very suggestive instances of bulbar paralysis occurring during typhoid fever. Two of these patients recovered; in the case of the third no histological changes could be found but all parts of the central nervous system were overrun by streptococci. A similar case is reported by Seitz in which pneumococci were found. A fairly full account of myasthenia gravis pseudoparalytica or "myasthenic paralysis," as the author calls it (bulbar paralysis without anatomical lesions) is given. In the earlier cases which are described the bulbar symptoms were the ones which chiefly attracted attention; latterly the proneness to rapid muscular fatigue has been particularly noted. The danger to the patient from this liability to muscular exhaustion was strikingly illustrated in a case under the care of the author. Electrical examination of the thoracic muscles, for instance, at once induced alarming dyspnœa. Mastication and swallowing were performed under difficulties owing to the speedy exhaustion of the muscles of the jaw and the throat. In order to spare the patient this fatigue Dr. Oppenheim caused him to be fed by a tube; unfortunately the spasms set up by the passage of this instrument proved fatal. The author's opinion that infantile convulsions in a certain number of cases are early symptoms of hysteria or epilepsy has, we think, been shown to be correct. He does not, however, give us any guide to the diagnosis of the hysterical or epileptic convulsion in a young child. The majority of children who suffer from eclampsia infantum, we believe, grow up healthy.

The pathology of those attacks which occur in connexion with acute purulent otitis media in young infants and which sometimes resemble a purulent meningitis, sometimes abscess of the brain, but which tend to get well, is obscure. The author believes that they are usually cases of so-called meningitis serosa and recommends lumbar puncture if evacuation of the pus from the ear is not successful.

In the chapter on Neuroses the high standard reached throughout the book is maintained. The author has exercised great judgment in his selection from the vast mass of facts which lies at the disposal of a writer on diseases of the nervous system and has arranged his material very skilfully. While we think that he was wise in refraining from the compilation of a bibliography he would have added to the usefulness of his book by giving references to the authorities quoted in the text. The work is in any case one which every practitioner will find extremely valuable and interesting. We understand that translations of it into Italian, Russian, and Spanish are in preparation.

The Climates and Baths of Great Britain, being the Report of a Committee of the Royal Medical and Chirurgical Society of London. Vol. II. London: Macmillan and Co. 1902. Medium 8vo. Pp. 628-xvi., with seven maps. Price 12*s.* 6*d.* net.

WE congratulate the committee of the Royal Medical and Chirurgical Society that undertook this work on the completion of its report. This second and final volume deals with the climates of London and of the central and northern portions of England, together with those of Wales and Ireland. The climates of Scotland are omitted as the necessary local coöperation could not be obtained. The chairman of the committee, Dr. C. T. Williams, has himself contributed the able section on South Wales in which the various meteorological data of the district and their significance in medical climatology are thoroughly discussed. The article on the Midland Counties is by Dr. P. Horton-Smith, by whose energy and

industry as honorary secretary to the committee the publication of the present volume has been much accelerated. In fact, he has done for the second volume what Dr. Archibald Garrod did for the first one. In comparison with the large number of seaside places visited by convalescents, overworked persons, and invalids for their tonic climates England is scantily supplied with places suitable as bracing inland resorts—and resorts of this class are much needed for patients who are troubled with biliousness, constipation, and headaches at coast resorts. Dr. Horton-Smith, however, has pointed out various places in the midland counties which can be used for the tonic effects of a visit, and favourable sites for future inland sanatoriums and health resorts have been suggested by other contributors—for instance, by the late Dr. D. J. Leech of Manchester in his article on North Wales. Sir J. W. Moore of Dublin has contributed the longest article in the volume; it would, indeed, constitute a fair-sized book by itself and it deals with the whole of Ireland, excepting Lisdoonvarna, which has been described by Dr. Norman Moore. Besides purely medical and climatological considerations a vast amount of interesting information regarding the history, antiquities, and traditions of Irish towns is included, and this at least the medical tourist in Ireland will certainly appreciate. A most important section is that by Dr. W. Ewart on London and "Greater London." In the greatest city of the world the artificial local modifications of climate, resulting from drainage and covering over of the soil, can be admirably studied, and in this respect Dr. Ewart's article has a special value of its own. The present volume is, indeed, a storehouse of information and as such should be available as a work of reference by every practitioner in the British Islands. To those in other countries seeking information on British resorts it should prove invaluable and will correct many erroneous notions.

The book is a pioneer one and much ground has been left marked out for future observers to study. It is to be hoped that local practitioners will be stimulated to fill up any gaps and shortcomings which they may detect with the results of their own observations and inquiries, and that such results may afterwards be embodied in a second edition.

Das Wirbeltierblut in Mikrokristallographischer Hinsicht. Von Dr. Med. H. U. KOBERT. Mit einem Vorworte von Staatsrat Professor Dr. R. KOBERT, Direktor des Instituts für Pharmakologie und Physiologische Chemie zu Rostock. (*The Microscopical Characters of the Crystals obtained from the Blood of Vertebrates.* By Dr. H. U. KOBERT, honorary physician to the Freemasons' Hospital at Hamburg. With 26 Illustrations in the text.) Stuttgart: Von Enke. 1901. Pp. 118.

DR. R. KOBERT remarks in his preface to Dr. H. U. Kobert's work that the micro-chemical characters of the crystals of blood, so important in legal investigations, are not well known to the physicians and apothecaries of Germany who are analysts by profession, and that this ignorance is especially noticeable in regard to hæmochromogen crystals. The present short treatise is designed to enlighten that ignorance. In the animal kingdom there are two kinds of blood which may be termed iron blood and copper blood. Copper blood is represented by hæmocyanin and is found in mollusca, arthropods, and some tunicates, as has been shown by Halliburton. It appears to give colourless crystals. Dr. Kobert's views in regard to the nature of hæmoglobin agree with those of Hoppe Seyler who held that the substance of the red corpuscles was made up of a chemical compound, hæmoglobin, and not of two separate substances, stroma and hæmoglobin. The hæmoglobin in the arteries rich in oxygen he terms arterin; that in the veins poor in oxygen he names phlebin; and various methods are given by which arterin and phlebin crystals can be obtained. Free hæmoglobin only occurs in the blood of living man in hæmoglobinuria or in certain forms of poisoning, but he thinks it to be very questionable whether blood crystals ever form during life, hæmoglobin crystals, supposed to exist in the urinary tubules by various observers, being really crystals of parhæmoglobin. Dr. Kobert passes lightly over the various forms of methæmoglobin, such as sulphmethæmoglobin, cyanmethæmoglobin, peroxide of hydrogen-methæmoglobin, nitrite-methæmoglobin, photo-methæmoglobin, and others. Parhæmoglobin is obtained by treating oxyhæmoglobin crystals with strong alcohol, which without changing their form renders these crystals insoluble in water. Parhæmoglobin crystals can be obtained from the blood of animals such as cats poisoned with canadin from the hydrastis canadensis. For the recognition of blood in judicial inquiries hæmalin and hæmin are of great importance. A case has been put on record in which the Teichmann crystals of hæmin obtained by the addition of common salt and glacial acetic acid to the stain or spot were recognised to be true hæmin crystals, 40 years having elapsed since the blood was shed. The various methods of obtaining hæmin crystals suggested by Teichmann, Cloetta, Strzyzowski, Wachholz, and Nencki are described very fully. Several illustrations are given of hæmochromogen crystals from various animals, as the horse, hamster, guinea-pig, and owl. It seems to be not improbable that hæmochromogen and myohæmatin are identical. Dr. Kobert has collected the various statements that have been published by Nencki, Zaleski, McMunn, and others in regard to hæmatoporphyrin, and points out that if two atoms of oxygen are withdrawn from it phylloporphyrin is obtained which has close relations to the chlorophyl of plants. He considers that the hæmin molecule is composed of two hæmatoporphyrin molecules which are perhaps held together by the iron. A substance intermediate between hæmatoporphyrin and phylloporphyrin is mesoporphyrin, the composition of which is expressed by the formula $C_{16}H_{18}N_2O_2$, the hydrochlorate of which forms beautiful crystals. It is interesting to find that the colouring matter of the blood of animals and of the leaves of plants are nearly allied. There seems to be some difference of opinion amongst chemists in regard to the pigments of various shades that are grouped together under the name of "melanin," some thinking that they are entirely derived from hæmoglobin, whilst others, like R. Kobert, think that a part only has this origin. The last sections of the work are devoted to crystals from white corpuscles and the crystals obtained by Florence from the spermatic fluid which are of importance in medico-legal inquiries, to hæmosterin, blood-serum, fibrin, and formalin pigment crystals. The treatise gives concisely all that is known in regard to crystals obtained from blood and is valuable as a work of reference to all who are engaged in examining such crystals.

Diseases of the Digestive Organs in Infancy and Childhood. By LOUIS STARR, M.D. Third edition, rewritten and enlarged. London: Rebman, Limited. 1901. Pp. 448, with illustrations. Price 12*s.* 6*d.*

THE volume under review represents a third and revised edition of a work which was originally published by Dr. Louis Starr in the year 1891. Although much old matter which appeared in former editions has been deleted from the pages of the present volume nevertheless the inclusion of many new chapters, notably on Simple Atrophy, Infantile Scurvy, Rickets, and Lithæmia, more than makes good the loss as far as actual size is concerned. One of the special features which marks the revision of Dr. Starr's work is that conformably with the tendency of modern pediatrics the treatment of infantile diseases by drugs and

pharmacological preparations is relegated to an entirely subordinate position, while the value of hygienic and dietetic measures in prophylaxis and therapeusis is acknowledged and emphasised in every section of the work. The methods of artificial feeding occupy no inconsiderable portion of the introduction which discusses the general management of children and includes separate chapters on Bathing, Clothing, Sleep, Exercise, and Massage. As regards the general principles of artificial feeding the author insists strongly on the necessity of cleanliness and accuracy in the carrying out of whatever method is employed. The infant is not to be regarded as a mechanical machine constituted on one particular type. Allowances must be made for idiosyncrasies and individual peculiarities. We may, however, point out that an infant is guided in his actions by instincts and emotions and not by intelligence, and hence the suggestion that his own inclination as regards food should be humoured does not strike us as altogether sound. It is generally admitted that one of the first principles of infant feeding is to feed the child and not to allow him to feed himself.

Although the author highly approves of the "percentage feeding" his experience of the results of laboratory milk—that is to say, milk which is prepared according to prescription in the Walker Gordon laboratories—appears to have been most unfortunate. According to his view the home modification of milk carried out in accordance with accurate percentage formulæ possesses great advantages over the methods employed in properly constituted laboratories inasmuch as the process entails less manipulative interference with the physical and chemical properties of the natural secretion and consequently with its nutritive value as a food.

In speaking of the rearing of infants on condensed milks, the large quantity of sugar contained in the majority of these preparations is mentioned as possessing unquestionable advantages, inasmuch as an excess of this element tends to "make large babies" and to counteract the tendency to constipation. Most authorities, however, find little to admire in "largeness" of this kind, and although we are aware that Dr. Jacobi among others recommends the exhibition of sugar as a useful laxative it is altogether questionable whether the laxative action is due to anything else than fermentative processes occurring in the bowel. Feeding, however, on condensed milk is not recommended by Dr. Starr as a general practice, since prolonged adherence to this method is likely to lead to the appearance of symptoms of scurvy, a result which is also to be anticipated with any kind of artificial feeding in which the food is not "live." In a series of 25 cases of infantile scurvy which have come under the notice of the author it is interesting to notice that recovery has ensued in the majority of cases by the simple addition of a few teaspoonfuls of orange juice to the ordinary dietary of percentage milk (modified at home). The chapter on Lithæmia—which, by the bye, is not Americanised into "lithemia"—is full of instructive and useful illustration; although in practice this condition is frequently recognised under various guises it is not usually described as an independent pathological entity in works which treat of the diseases of children. The train of symptoms which are associated with this incomplete metabolism of proteid matter is attributed by the author to defective hepatic function due to hereditary causes or to a diet which is too abundant in nitrogenous elements. "It is quite common," continues Dr. Starr, "for healthy children after a surfeit of food to void urine laden with uric acid, but the patient cannot be classed as lithæmic unless the condition be persistent."

The second part of the volume contains chapters on Affections of the Throat, Mouth, Stomach, and Intestines, Liver, and Peritoneum. Each of them consists of a straightforward account of the etiology, symptoms, and treatment. Although, taken as a whole, the little book presents no striking or original features, it is full of common-sense advice and the rational methods advocated will certainly be appreciated by the patients who are treated on this plan.

LIBRARY TABLE.

Guide to the Microscopical Examination of the Eye. By Professor R. GREEF, Surgeon to the Ophthalmic Department of the Royal Charité Hospital, Berlin. Translated from the Second German edition by HUGH WALKER, M.A. Glasg., M.B. Edin., Assistant Surgeon to the Ophthalmic Department of the Glasgow Royal Infirmary. London: Rebman, Limited. 1901. Pp. 171. Price 5s. net.—This is a practical and most useful little book and should be in the pathologist's room of every ophthalmic hospital. Opportunity, says the Father of Medicine, is fleeting, and many a valuable specimen is lost by the neglect of the surgeon to place the specimen in some preservative fluid immediately after its removal. A very few minutes' delay proves fatal to histological research where the tissue is very delicate, as in the case of the retina. At the same time the author is quite right in stating that the examination of tissues in the fresh state is less practised than it deserves to be. "Many advantages are lost by hardening. A glioma of the retina presents in the hardened and stained preparation a picture quite different from that which it affords in the fresh condition. Every intraocular tumour should be examined in its natural state." With regard to the various methods of fixing and hardening the globe, the directions are very clear and explicit. The book is divided into two parts. The first or general, part gives, besides the methods of fixing and hardening, the imbedding and paraffin processes and the mode of mounting in glycerine. The methods of staining, double and triple staining, and the demonstration of definite substances and tissue elements are fully described. The second or special part is occupied with the modes of demonstrating the structure of the several tissues of the eye, such as those of the cornea, the iris and choroid, the lens, the retina, and the optic nerve. We venture to give one example of the plan of the work by quoting the section on that method of triple staining (p. 61) known as Van Gieson's stain. "1. Hardening in Müller's fluid or otherwise. 2. Imbedding in celloidin. Section-cutting. 3. Preliminary staining in Delafield's or Boehmer's hæmatoxylin. It is better to overstain the sections (half an hour) and not, as was originally recommended, to keep them in the hæmatoxylin for only three to five minutes. 4. Thorough washing in water. 5. Staining for a minute or two in a mixture consisting of a saturated aqueous solution of picric acid to which a few drops of a saturated aqueous solution of acid-fuchsin are added before use. The depth of the fuchsin stain may, if necessary, be lessened by immersing the sections in a solution of picric acid. 6. Washing for a minute or two. 7. Alcohol 80 per cent. and 90 per cent. 8. Oil, Canada balsam." In this stain the nuclei are coloured violet, the axis cylinders red, and the medullary sheaths yellow.

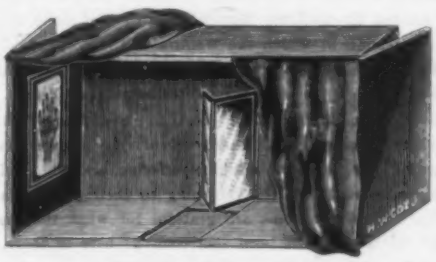
Handbook of Public Health. By JOHN ORR, M.D., F.R.C.P. Edin., M.R.C.S. Eng. Edinburgh: E. & S. Livingston. 1901. 8vo, pp. 236. Illustrated. Price 4s. net.—There are already so many volumes which are said to be "hand-books" of public health that we cannot but regret that this author has chosen the word as part of the title of his little book, for it is certainly not a "handbook" in the sense in which many of our large text-books are. It is more elementary in its teaching, suited to the ordinary need of the medical student for general knowledge, not suitable for the requirements of the Public Health diploma student, and therefore would be more aptly termed a "Note-book," or "Outlines," of the art and science of hygiene. It is quite usual to read in a preface that the author considers that "in spite of the already

large existing literature of this subject there is a distinct need" for yet another book, wherein old opinions and the views of authorities are too often served up again, embedded in a mass of fresh verbiage with scarcely one new idea throughout. The expression, "need" for another book, occurs in this work and this time we are inclined to agree with the author. Text-books on public health which contain full details and which are excellent for examination purposes exist in plenty; but for the ordinary student of medicine who has no time or inclination to devote to the study of a large work on public health and who yet is desirous of becoming familiar with the methods of ventilation, water-supply, the disposition of refuse, drainage, and school hygiene there has been, so far as we are aware, no really satisfactory book. In this little work students will find just what they really ought not to be ignorant of—rough-and-ready methods of softening water and of estimating the degree of impurity in respired air and in drinking-water. There are clear explanations of such ordinary meteorological instruments as the anemometer, the rain-gauge, and the barometer. We suggest that in the next edition there should be a *short* list of bibliographical references at the end of each chapter. At the end of the brief notice of cremation, for example, the reader will doubtless feel that the subject has been quitted too soon and that the author's presentation of it is too sketchy. The busy man can seldom attend at the medical library and wishes to waste no time in finding out what book he ought to read. A reference in this case to Sir Henry Thompson's recently published excellent book on cremation would be most useful. The present work has many merits; it is clearly and pleasantly written, is well arranged, and contains a great deal of useful and important information.

New Inventions.

STEREOSCOPE FOR X-RAY WORK.

THE illustration shows a new form of Wheatstone's stereoscope for x-ray work. The object of it is that negatives may be employed instead of prints, so that both time and trouble are saved, minute changes in structure of bone are much better demonstrated, and the light coming through the negative gives a better solid effect. It can also be used for prints if desired. It consists essentially of a black box with windows cut at each end, one side being covered by a black cloth to admit the head of the observer. Into the windows



are fitted the various sized frames for the different plates used and these are adjustable if the negatives do not quite correspond. Opal glass screens at each end reflect the light. The stereoscope negatives are placed in the frames at each end and examined in the mirrors in the ordinary way. The makers of this instrument are Messrs. Cox and Co.

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Looking Back.

FROM

THE LANCET, *SATURDAY, JUNE 5*, 1824.

Foreign Department.

ON THE CURE OF HYDROPHOBIA.

[From Hufeland's Journal der pratischen Heilkunde.—March.]

Blisters under the tongue in hydrophobia, long known in Greece under the name of Lyssais. By Dr. XANTHOS, *of Siphnus, in Greece.*

At the end of January 1823, as many of my countrymen, compelled by the events which occurred in our country, were travelling from Russia through Germany to Marseilles, I saw one of them who came from Trapezunt, who had been bitten by a dog in Hanover.

He had a considerable wound in the middle of the right thigh, which pained him in walking. Notwithstanding my advice, that he should stop on his journey till the wound was healed, he insisted on setting out the same day with his countrymen, and took nothing with him but a little mild salve. Early in the month of May, I met this man again with 27 of my countrymen, in Zurich, and was happy to find the wound in a short time completely healed. The man said it was a lucky circumstance that the dog was not mad; upon which a Greek, from the Peloponnesus, considerably advanced in years, and well acquainted with the customs of our country, observed, that if the dog had been mad, it would not have been of much consequence, all that would have been necessary was to cut out the *Lyssais* as soon as possible; I immediately put the question to him, 'What do you mean by the *Lyssais?*' He replied, 'In persons who have been bitten by mad dogs, there appear on the ninth day, little blisters under the tongue, which we call *Lyssais;* these must be cut off with a sharp knife, and the bleeding suffered to continue till the poison is discharged.'

Acquainted with the information, which Dr. MAROCHETTI had communicated on this subject, I considered the testimony of this old Greek, extremely important. I inquired of my other countrymen, who had lived in various provinces of Greece, whether they were acquainted with this practice; most of them answered in the affirmative; some assured me that they had often witnessed it.

As my countrymen were too much dispersed in different places to enable me personally to obtain particular information on this subject from each of them, I sent certain questions from Heidelbury, and obtained from Aran, the following answer from Polychronis, a Thessalian.

"If a man is bitten by a mad dog, on the ninth day small blisters, called *Lyssais* appear under the tongue; they are about the size of a pea, some of them smaller! they are rather dark coloured, and look like flesh.—They are situated on the under side of the tongue, near the membranous band, particularly on the side of the veins. If you observe the tongue of a sound man, and then examine that of a man who has been bitten by a mad dog, you will immediately see the difference.

"As soon as these *Lyssais* are observed, they must be cut out with a sharp knife, and the bleeding continued, till the poison is discharged. If this is neglected, or deferred too long, as for instance till the twentieth day the brain becomes affected, and the patient will die in deplorable convulsions."

ROYAL INSTITUTION OF CORNWALL.—At the meeting of the Royal Institution of Cornwall held at Truro on May 27th an interesting paper by Dr. John Beddoe on the history of the human bones recently found at Harlyn Bay, Cornwall, was read. Dr. Beddoe estimated that the stature of the people whose bones had been discovered was 64·5 inches and 61·2 inches for the male and female respectively. Dr. Beddoe added that the observations on the discoveries at Harlyn Bay went to swell the mass of evidence that the general population of Britain before the Christian era was not of tall stature.

THE LANCET.

LONDON: SATURDAY, JUNE 7, 1902.

Peace.

ON the evening of Sunday, June 1st, it became known in London that terms of peace had been signed at Pretoria and that the struggle which had weighed so heavily upon England, while it threatened not merely the conquest but the extinction of her adversary, had been brought to a formal conclusion. The news has afforded to all a feeling of sincere relief and thankfulness, for in whatever manner many Englishmen regarded their enemy at an early period of the contest they had learnt to respect him later as a foe full of resource and fighting desperately in a hopeless cause, while the views held with regard to him by those who had returned from the seat of war had done much to temper those held by others who had had no such experience. The Boers had been beaten; as far as their fighting capacity was concerned they had been almost annihilated; none, least of all those who had fought against them, wished to see them exterminated. All now hope that the pacification, the settlement, and the rehabilitation of the late republics as British dependencies will proceed tranquilly, rapidly, and effectively, and that south as well as north of the Orange river the signature of the terms of surrender will be followed by lasting peace and revived prosperity.

The task before the representatives of British rule is not light. To a territory the vastness of which it is difficult for us to appreciate at home, but to which they are fully alive, they have to restore its inhabitants and to restore them in such a manner that they will renew their domicile under equal laws obeyed by all and in circumstances that will enable them to become useful citizens under new constitutional conditions. In the Cape Colony as well as in the Boer States the restoration of constitutional government is still a matter for future deliberation and care. No light part of the work of renewing the civil and social life of the tracts laid desolate by war will consist in the difficulty of so restoring the population to their homes that they may be able to support life. Starvation will for some time be one of the dangers that will beset them, while many of them will be living in localities which during the war have proved hotbeds of disease. The burial of the dead has necessarily been hurried in many instances—and this in places which have been, or may become, dwelling-places for the living, while thousands of animals have died and have not been buried at all. Experience in the concentration camps has shown that the humbler classes of the Boer population are entirely ignorant of the rudiments of sanitation and the treatment of the simplest forms of disease, and that they are by no means ready to be instructed or to follow the example set by those whose habits are more in accordance with modern views upon such subjects. Still, no doubt the concentration camps and those in which prisoners of war have been confined will prove to have been educational centres of no mean value, and the lessons learnt in them will be found to bear fruit to some extent as time goes on.

The lessons of the war, however, that should most carefully be laid to heart in the years of peace that all now hope to enjoy, are those which have been taught to the victors. Already the military organisation of our army has been remodelled and the military instruction administered to its members has been completely changed in accordance with the teaching of bitter experience. The fighting force of Great Britain stands now in possession of actual experience of warfare that will meet with respectful regard among other nations. The authorities responsible for the Army Medical Service have also learnt much in the same stern but unrivalled school. They have learnt, or have had the opportunity of learning, its defects of organisation, they have learnt the limits of its resources, and the nature of the resources with which civilian aid, voluntary or otherwise, can reinforce it. They have also been enabled to form opinions as to the best mode of providing for the obtaining and making full use of such extraneous aid in future time of stress. The Royal Army Medical Corps has learnt to the fullest extent the nature of the wounds inflicted by modern artillery and modern small-arm fire, as well as how to adapt the latest discoveries and resources of modern surgical science to the necessarily limited apparatus and equipment of the field hospital. It has had experience of epidemic disease attacking large bodies of troops, and of all the ills that arise from over-fatigue, over-exposure, and a defective food-supply, upon a scale without parallel since the adoption of modern methods of dealing with these difficulties. The authorities have now the opportunity of reviewing in time of peace its successes and its failures, of insuring the repetition of the former should any future occasion arise, and of guarding against the recurrence of any shortcoming where it is possible for human prudence and ingenuity to guard against it. It is easy beforehand to make resolutions that this shall be done, but history contains instances which show that the lessons learnt in war are not always sufficiently remembered when peace gives the opportunity of studying them with effect. The new warrant is a step in advance; it should secure valuable men for the Royal Army Medical Corps. But many directions yet remain in which the welfare of the corps requires watching. The war so recently ended has proved this; the peace now commencing must not lead to forgetfulness.

There is one thing that we can confidently affirm will now be learnt by all those who during the war have worked to save life and to mitigate suffering, and who during the coming months will be returning to their country, and that is, that we at home are grateful for what they have done. If there have been shortcomings here or there, if some have cavilled at this or at that, the fault has been found in some defect of a system which did not adapt itself to exceptional and trying circumstances. For the *personnel* of the surgical and nursing staffs which have done their duty so nobly in South Africa there have been, and will be, nothing but unstinted praise and high honour. They have toiled without rest or remission through the weary months and years. They have endured hardship

and courted danger and some have laid down their lives. Some have won the recognition of their heroism in the medals and decorations that are claimed by conspicuous gallantry, but for the most part their battles have been fought unseen, their courage and their endurance have been shown where few were aware of these qualities, or where all were displaying them in an equal degree. Let us not forget those who will never return to receive the meed of praise and let us accord it ungrudgingly to those who now come back to seek rest among their grateful countrymen.

Metropolitan Hospital Sunday Fund.

JUNE 15TH will be Hospital Sunday. We publish to-day our annual supplement in which we urge the claims of the London hospitals upon the generosity of the public, and we add the hope that in the year and month of the coronation of King EDWARD VII. the pressing needs of the maimed and sick poor in the great metropolis of his kingdom may not be forgotten. Their claim to consideration may well inspire the eloquence of the preachers in our places of worship at any time, but during such a period as the present one there is need to be more than usually insistent. Many will, no doubt, during the current month exceed their normal rate of expenditure owing to their natural eagerness to exhibit their loyalty and to witness the many interesting spectacles which an occasion unparalleled in their memory will provide. If, however, the Hospital Sunday Fund suffers from the circumstances in which it is thus collected in 1902 it will be clear that, by some, at all events, loyalty will have been displayed and enjoyment sought at the expense of the hospitals of London and of those for whose benefit those hospitals exist. Let us hope, however, that no such reproach will rest on any, but that rather all will give with a generosity exceeding that of previous years; not so much in order that the Hospital Sunday Fund may not suffer by the coronation as in order that in the year of the crowning of their King it may eclipse all its previous records. Let those who give also remember that if their generosity is exceptional in the present year it will bear an exceptional result, for a wealthy friend of the hospitals of London has promised that should the total of the Fund reach £80,000 he will increase it by 25 per cent. Those who realise that through this generous promise every sovereign they give may be worth 25*s.* to the Fund will, we hope, find an additional incentive in the determination that the imposed condition shall be fulfilled. It will be remembered that the sum realised on Hospital Sunday last year was £51,993, and in the year before £53,504, while the highest sum contributed hitherto has been £60,361, so that there is some need for unusual liberality at the present time.

Another circumstance should not be forgotten which may well stimulate generosity. On the last two occasions upon which we have pleaded the cause of the Metropolitan Hospital Sunday Fund we have done so with the knowledge that the country was engaged in a desperate struggle with a determined enemy—a struggle which not only was absorbing valuable lives but which was pre-eminently a costly struggle, entailing the expenditure of sums of money that probably no other country in the world could have afforded to pay. Meanwhile, every market in the metropolis was feeling the depression in trade consequent on the prolongation of the strife, and almost every man who was called upon to contribute to the Hospital Sunday Fund might fairly have buttoned-up his pockets and replied that he was poorer than in other years and so could not afford to give. This, we are thankful to say, is no longer the case to-day. The close of the war in South Africa has long seemed imminent, it is now an established fact. Peace has brought promise of prosperity to many, rest from bitter anxiety to others, with, presently, the return of relatives who have for years past faced death and danger and endured wounds or disease. Let those whose relatives have lain in the hospitals of South Africa and those who have been in those hospitals not forget that the surgeons, military or civil, who attended them, as well as the nurses who ministered to their needs, acquired their skill and learnt their duties in hospitals such as they are now called upon to assist, while a large proportion of them were trained in the very hospitals for the sake of which the Hospital Sunday Fund is organised.

In order that lay readers, many of whom have not had the opportunity of judging for themselves, may be able to get a glimpse at the work which is done in the hospitals, as seen by the eyes of those on whose behalf it is performed, we have framed our annual Hospital Sunday Fund Supplement in an unusual form. Those who peruse it will find the testimony of inmates of hospitals, or of persons who have been inmates or of the parents of children who have been inmates of hospitals, taken from their own lips. They will find recorded the gratitude of those whose injuries range from the crushed pelvis and ruptured bladder of the navvy who, in his own words, was "squeedged" against a stanchion by a bale of wool, to the broken leg of the small boy who fell when playing "over-backs" in the street. They will find patients ranging from the young clerk with tumour of the brain or the cable engineer of the *Grappler*—patients who for any ordinary purposes or in the case of any minor ailment would not have applied to hospitals for aid at all—to the children of the humbler classes of working men and the "bargee" who makes his mark because he cannot write his name. If they are not satisfied that these are the *ipsissima verba* of the patient, expressing his or her unprompted gratitude, they will find in our columns letters written direct by patients to their nurses after leaving the hospital or by their relatives—letters which we print without alteration of spelling or construction, believing them to be most eloquent as they were written (page 1559). We regret that space did not permit of their inclusion in our Abstract supplied to the places of worship. The medical man in the exercise of his profession has to meet ingratitude as well as gratitude, whether he works in return for a fee or as a work of charity. He will find in the columns of our Supplement that his efforts in the London hospitals, whether he be one of the senior members of the staff or a house surgeon or house physician, are not altogether in vain, but our Supplement is addressed primarily to the public and not to him, and the gratitude sought for was primarily gratitude to the hospital—gratitude, that is, towards the institution, not towards the individual who carries out his

garded as essential to a successful vaccination is not duty in it. This gratitude, we need hardly say, extends itself to those whose generosity aids and supports the hospitals and it is to them that we commend our Supplement in order that once more their generosity may be aroused.

The hospitals are not without their enemies. The anti-vaccinationist does not regard the medical profession with favour; probably he is not a liberal contributor to the Hospital Sunday Fund and he may be capable of attempting to dissuade others from supporting it. We recommend our Supplement to his careful consideration. The anti-vivisectionist is a more active foe; he carries out his campaign without shame or scruple and he openly urges the subscriber to hospital funds not to contribute to institutions which are connected in any way with experiments on live animals. Let us ask those who may be prone to listen to the denunciations and assertions of the anti-vivisectionist to consider the cases that we have laid before them, to examine the statement accompanying each of them as to the clinical aspects of each case and the steps taken to remedy it, and to ask themselves what the position would have been in surgery and medicine had no experiments upon live animals ever been made in the world, either formerly or during recent years.

The advocacy of the claims of the Hospital Sunday Fund does not, however, rest with us. The cause of the institutions which exist for the healing of the sick and maimed poor of all creeds and nationalities in this great metropolis is rightly pleaded on this occasion by the ministers of all sections of religious opinion, of all churches and creeds, in places of worship in which they occupy the pulpit. We only venture to supply them with a few facts, should they care to make use of them, in a cause which in itself is enough to stimulate their eloquence to the highest pitch, and we venture also to remind their hearers that there are others who do not invariably attend places of worship who may be willing to give if they are reminded of the call to do so. The golf-links and the motor-car, the bicycle and the river, have their adherents whose first argument, if they were asked why they did not attend Divine worship, would be that they on their day of rest sought the free air in the pursuit of health. These of all others should remember that the hospitals exist to restore health and strength to those whose enjoyment of these blessings is as great as theirs and to whom health and strength are necessary if they are to hold their own again in the struggle for existence. No better opportunity of affording practical help to such as these could be found than is offered by the Hospital Sunday Fund. It has during its existence done incalculable good to the hospitals of London; it has bestowed the sums entrusted to it with impartiality; it has insured that in the institutions to which it contributes all funds disposed of by those institutions shall be administered in a business-like manner and with proper economy. Thus it has afforded a guarantee to its contributors that money given for the benefit of the London hospitals shall benefit those hospitals to the fullest possible extent, without any possibility of its being diverted into any channel not contemplated by the giver. Truly, we may say that the Londoner, in the enthusiasm of his loyalty, in his joy at the knowledge that when his King is crowned his country will be at peace, can devote his thank-offering, be it great or small, to no worthier object than the increase of the efficiency of the Hospital Sunday Fund.

The Lancet Commission on Glycerinated Calf Vaccine Lymphs.

IN a former Report of THE LANCET Special Commission on Glycinerated Calf Vaccine Lymphs, published April 28th, 1900 (page 1227), attention was drawn to the fact that although the lymphs then on the market differed very greatly as regards their bacterial purity they were, taking them as a whole, eminently satisfactory. These results were important, not only because of the general high average of the bacterial purity of the samples examined, but also from the fact that the lymphs placed at the top of the Table[1] retained their vaccinal activity. From a consideration of the present report (see p. 1621 of this issue) it is evident that the general results are in many ways even more satisfactory than were those obtained in the first series of examinations. It must be pointed out, however, that the anaerobic organisms are much more numerous than they were on the first occasion. This, apparently, is to be explained by the fact that the cultures in glucose formate agar were kept under observation for a much longer period than they were in the first instance; the anaerobic columns in the two sets of experiments can therefore scarcely be compared, and these organisms have for the present been practically ignored, though in future it may be necessary to take them into account. As regards the special statements made and the conclusions arrived at in the first report the Commissioners have now little to retract. In fact, satisfactory as the general results of this second inquiry are "there is," to repeat our exact words of two years ago, "still room for improvement since there is yet much diversity in respect to the degree to which extraneous bacteria are present." The results of the investigation carried on by the Commission appear to indicate still more clearly that the efficacy of the vaccine is not necessarily impaired in those cases in which the glycerination has been carried to such a point that practically all the bacteria have been got rid of. It cannot, however, be insisted too strongly that agents for the sale of vaccine lymphs should be careful not to send out lymph of which they do not know the exact date and must avoid sending it out after the date given by the manufacturer as limiting its due period of action. In the case of one lymph there appears to have been a want of uniformity as regards the activity of different batches, and on one occasion at least such lymph was received after the date given by the manufacturer as that defining the trustworthiness of the lymph. The Commissioners have had placed at their disposal the results of a large number of cases in which various vaccines have been used and they are more firmly convinced even than they were by the results of the earlier investigation that the freer the lymph is from extraneous pyogenic and other organisms the less marked will be those inflammatory concomitants which are so familiar to all vaccinators. Much of the irritation that has often been re-

[1] THE LANCET, April 28th, 1900, p. 1234.

so much due to the action of the vaccinal organism itself as to organisms acting as irritants upon the cutaneous tissues. The Commissioners have been informed that the best results were invariably obtained with those lymphs which produced late vesiculation, and they repeat the words that they previously employed "that if a lymph be free from bacteria, especially streptococci and staphylococci, and if typical vesicles, slow of development, with little inflammatory areolæ and late in coming to maturity, be obtained the patient is properly vaccinated." In the first report they had not obtained sufficient information to be able to give a definite opinion, but, with the information now placed at their disposal they have no hesitation in speaking most definitely on this point. Our readers will notice the practical nature of the hints given in the summarising paragraph of the report dealing with the causes of "bad" vaccination, from which we have freely quoted.

Annotations.

"Ne quid nimis."

SOME POINTS ABOUT THE NAVAL AND ARMY MEDICAL SERVICES.

IT may be well to call attention to a letter from the warden of the London Hospital Medical College on "The Royal Navy Medical Service," which appeared in THE LANCET of May 3rd (page 1281), and to the communication of "Parent" in the correspondence columns of this issue because the two letters seem to us to invite comment at the present time. With regard to the first letter, there appears to us to be a good deal that is pertinent and forcible in what the warden of the London Hospital Medical College has to say about the regulations for the Royal Navy Medical Service recently issued by the Admiralty. We agree with the warden in thinking that it would be better for a naval surgeon to hold a house surgeoncy at a hospital after, instead of before, his entry into the service and for him to be allowed to count the time whilst so employed as service towards promotion and pension; but we imagine that there might be some difficulty in getting the financial authorities to continue to pay him during that time as if he were in the actual performance of his naval duties. With regard to the communication signed "Parent," we may say that (again speaking generally) naval medical officers express themselves as satisfied on the whole with the new regulations. So far as the navy is concerned when apparently disparaging points are selected and no attention is paid to those in which the Naval Medical Service has an advantage over the Army Medical Service the result is likely—as are all partial and incomplete views—to be misleading. Take, for example, the question of allowances. In the army officers have to obtain lodgings, board, and servant, while in the navy an officer has a furnished cabin, a servant, and a capital mess—for the latter of which he pays 2*s.* a day only. An army officer could not live like this on his allowances. From a merely pecuniary point of view, if a man is careful and desirous of saving money, the navy is the better service. But we may deal a little more directly with some of the points raised by our correspondent, and in doing so we have for facility of reference followed them as numbered in his letter. 1. In our opinion the words "if" and "may" in the first paragraph of "Parent's" letter can be safely ignored, for we feel confident that if an officer conducts himself properly after entering the service he is sure of promotion, and it would be a bad thing for the service if he had any vested right to this and could claim promotion when he had not so conducted himself as to deserve it. 2. In the Naval Medical Service promotion is given for "distinguished service or conspicuous professional merit" and such promotions are maintained up to the full number allowed. Officers are on the list of staff surgeons—i.e., officially ranking with major—at the present time who have not more than four or five years' service as surgeons. 3. Our correspondent's third point is correct and calls for no comment. 4. Although all the officers in charge of small hospitals or marine infirmaries belonging to the navy do not get money as "charge-pay" they get it as "hospital allowance," ranging from £39 to £112 per annum. 5. It is correctly stated that full-pay sick leave is limited to three months, but this applies to *all* naval officers and not to medical officers only. 6. If there is no additional grant of daily pay accorded to naval medical officers who may qualify as "specialists" it has to be borne in mind that medical officers in charge of flagships where special knowledge of sanitary matters is required receive from 2*s.* 6*d.* to 5*s.* a day extra.

A CITY WITHOUT MEDICAL MEN.

THE Americans still have their Dowie, the prophet who was received with such distinct disfavour in this country. Recent copies of a curious sheet called *Leaves of Healing* describe the founding, building, and civic incorporation of Zion, a city of several thousands of inhabitants, ruled over by the Rev. John Alexander Dowie as a sort of High Priest. No medical men are admitted within the walls of Zion which fair city is under the governance of a recently elected mayor and corporation who in their turn are subordinated to the all-pervading Dowie and a body suggestively named the "Theocratic Committee." "The exclamation, Wonderful! Wonderful!! is not merely upon our lips but upon the lips of all who see—men of the world," exclaims Mr. Dowie's paper. "Railwaymen, business men of all kinds, even newspaper men, are amazed at the Fact that Zion City is already a great Reality. The newspapers told them it was only 'a scheme,' or 'a dream,' or 'a city on paper.'" Medical men are not admitted because they are superfluous in Zion. They might be so wanting in a knowledge of etiquette as to interfere with the roaring practice of Dowie and his myrmidons who have apparently worked wonders of late. There is a T. A. Beatty, for instance, a nice old man to judge by his portrait, who has suffered all his life from sick headaches and latterly from a lump upon his chest. He describes his case, *à la* Walt Whitman, thus:—

"About four years ago I had a little lump on my breast.
It proved to be a cancer.
I did not say much about it to anybody, until I felt sure that it was a cancer.
Those who had seen cancers said it looked like one."

To come to the point, however, when the growth was larger than half a hen's egg Overseer Piper prayed for its disappearance. This was on August 27th, 1900, and, strange to relate, the growth did what we only wish cancers would do—"it ran out, and in four weeks it was gone." "About a week or two after the cancer was killed," Elder Reed exorcised the bad headaches of the same patient. There's evidence for you on the futility of medical men. And if corroborative testimony be needed, consider the case of Mrs. Nellie Crain who was "delivered from boils and an abscess in answer to prayer." "I was terribly afflicted with boils," she writes, "and what seemed to be an abscess in my side." But the lady wrote to Zion and "after a hard-fought battle with the enemy the victory was finally won and I am

completely restored." Even more remarkable is the case of the "young lady seriously ill of appendicitis" who wrote to announce her recovery as lately as April 19th last. "She was suffering from what seemed to be appendicitis," but after the usual invocation by a Zionist she "fell asleep" and quickly recovered. Space forbids us to discuss the cases of those who were healed of "measles and polypus in the nose," "measles in the eyes," and a "head and lungs filled up with dirt and dust." Our readers may thirst to learn more about "Miss Ottilia Wilker's testimony of a short limb lengthened," but we cannot find adequate space to deal with this and similar pathological phenomena. We have, however, quoted sufficient to show that Dowie, though an egregious quack, is no fool. He appeals to the more thoughtful among artisans and mechanics who earn good wages and are anxious to show mental activity by revolting against all ancient knowledge. Dowie has quite got rid of the ancient prejudice in favour of poverty, which perhaps militated against some of the teachings of the older saints. The material money-getting element in Zionism and other new American heresies is a strong pillar of support to the new teachers. Some of them promise boundless wealth to those who will merely set their minds on it and Dowie's followers not being students of sociology appear to be multiplying. They present a curious sight to the student of manners in the twentieth century.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

WE understand that the Lord Mayor has kindly consented to allow a public meeting to be held in the Mansion House on July 14th, at 4 o'clock, with the object of appealing for the funds which are absolutely necessary in order to carry out many urgent requirements in this hospital. The need for alterations was pointed out by the commission of inquiry which, it will be remembered, was held last year at the request of the governors. Isolation wards, a laundry, a new operating theatre, and the utilisation or reconstruction of two houses adjoining the hospital with a view to the provision of further accommodation for nurses and out-patients, are amongst the most needed of those requirements, and are all of paramount importance if the institution is to carry on its work under conditions conforming with modern ideas of hygiene and scientific cleanliness. The hospital owes its inception to a Mansion House meeting which was called by the Lord Mayor of London in November of the year 1859 and has, from small beginnings, gradually attained its present position as one of the chief special hospitals of the world. In addition to a large proportion of patients whose condition requires prompt and active medical or surgical treatment many of the cases received at this institution are essentially chronic in their course and often only open to palliative measures of relief, and this fact renders its work very largely supplementary to that of the general hospitals of the kingdom in which acute and curable complaints must necessarily, and do properly, occupy the most important place. The aggregation and investigation of large numbers of cases of nervous disease have led to important advances in classification and diagnosis which are impossible where the numbers are fewer and the opportunities for study are less prolonged. The results accruing from the facilities thus provided have been freely given to the medical world and have promoted in no small degree the science of neurology. The manner in which paralytic and epileptic patients are sent to Queen-square, not only from all over London and the provinces but from distant parts of the empire, testifies to the appreciation on the part of the medical profession of the benefits conferred on these sufferers, and affords ample grounds for hoping that the support of the profession will not be lacking at the present juncture. Members of the philanthropic public who are anxious that their generosity should serve the double purpose of relieving the peculiarly poignant sufferings incident upon diseases of the nervous system and at the same time of aiding such advance of knowledge as may tend to their prevention as well as remedy, must often turn for counsel in regard to appropriate channels to their medical advisers. An opportunity is thus afforded of promoting the welfare of an institution like the National Hospital for the Paralysed and Epileptic. We venture to hope that such opportunities will not be neglected and that the public will respond generously to an appeal which has as its ultimate object the relief of a class of patients whose needs are not at present adequately provided for.

THE PINE-APPLE AS A DIGESTIVE AID.

THE partaking of a slice of pine-apple after a meal is quite in accordance with physiological indications, since, though it may not be generally known, fresh pine-apple juice contains a remarkably active digestive principle similar to pepsin. This principle has been termed "bromelin" and so powerful is its action upon proteids that it will digest as much as 1000 times its weight within a few hours. Its digestive activity varies in accordance with the kind of proteid to which it is subjected. Fibrin disappears entirely after a time. With the coagulated albumin of eggs the digestive process is slow, while with the albumin of meat its action seems first to produce a pulpy gelatinous mass which, however, completely dissolves after a short time. When a slice of fresh pine-apple is placed upon a raw beef-steak the surface of the steak becomes gradually gelatinous owing to the digestive action of the enzyme of the juice. Of course, it is well known that digestive agents exist also in other fruits, but when it is considered that an average-sized pine-apple will yield nearly two pints of juice it will be seen that the digestive action of the whole fruit must be enormous. The activity of this peculiar digestive agent is destroyed in the cooked pine-apple, but unless the pine-apple is preserved by heat there is no reason why the tinned fruit should not retain the digestive power. The active digestive principle may be obtained from the juice by dissolving a large quantity of common salt in it when a precipitate is obtained possessing the remarkable digestive powers just described. Unlike pepsin, the digestive principle of the pine-apple will operate in an acid, neutral, or even alkaline medium, according to the kind of proteid to which it is presented. It may therefore be assumed that the pine-apple enzyme would not only aid the work of digestion in the stomach but would continue that action in the intestinal tract. Pine-apple, it may be added, contains much indigestible matter of the nature of woody fibre, but it is quite possible that the decidedly digestive properties of the juice compensate for this fact.

INSANITY IN TWINS.

INSANITY in twins is a rare and interesting condition and one which serves to throw light on the difficult and obscure problem of the constitutional predisposition to mental disease. Instances of insanity in twins are uncommon in the records of medical literature, the few cases known to have occurred in the United Kingdom having been reported by Clouston, Wigglesworth, Mickle, and Turnbull in the *Journal of Mental Science* during the past 25 years. In the *Archives de Neurologie* for May Dr. P. Keraval, the medical superintendent of the asylum at Armentières, and Dr. G. Raviart, assistant medical officer, have reported a case of insanity occurring in twin brothers who had for many years lived quite apart from one another. One of the patients was a man, aged 39 years when admitted to the asylum in

September, 1888. He was married and was the father of two children. The patient's mother was living and well. He was a man of temperate habits and free from syphilis. On admission to the asylum he was suffering from symptoms of general paralysis of the depressed type with delusions that he was dead and had no bodily organs (*délire des négations*). He refused to take food and the disease progressed rapidly and proved fatal in four months from the time of his admission. The twin brother was admitted to the same asylum in November, 1896. He was a temperate man, free from syphilis, married, and the father of five children. There were symptoms of incipient general paralysis on admission, together with failure of memory, great depression, weeping, and delusions that he was ruined and dead—the same type of delusions as his brother had. He suffered from congestive or apoplectiform seizures and gradually grew worse and died in May, 1899. It was a curious fact that his wife, who predeceased him in January, 1899, was a general paralytic. Dr. Keraval and Dr. Raviart state that the special interest of these two cases lay first, in their twinship; secondly, in the absence of hereditary antecedents of insanity; thirdly, in their freedom from syphilis and alcoholism; fourthly, in the fact that both were married and developed the same form of insanity in adult life; and, lastly, in the fact that where the general paralysis appeared earlier, as in one of the brothers, it ran a more rapid course and resulted in death more speedily.

DEFECTS OF VISION DUE TO THE USE OF DRUGS.

PROFESSOR G. E. DE SCHWEINITZ of Philadelphia has published in the *New York Medical Record* of May 17th a paper on the Deleterious Results of Certain Common Drugs and Narcotics on the Organs of Sight, as observed in a large number of cases under his care in the ophthalmological department of the Philadelphia Hospital during recent years. By far the most important of the forms of functional visual defect (amblyopia) met with was that produced by quinine. It appeared in several forms, varying with the dose and with the idiosyncrasy of the patient. Thus temporary dimness of sight, lasting for some hours, might result from the taking of moderate doses of quinine, especially in the case of women of nervous temperament. If the daily dose was large—e.g., from 60 to 80 grains of quinine per diem—a second and more serious form of visual trouble followed. Blindness of sudden onset and almost complete in degree resulted, and this condition lasted for some days. Ophthalmoscopic examination showed great pallor of the optic discs and blanching of the retina, due probably to a condition of intense ischæmia. Quinine in large doses had a toxic action on the ganglion cells of the retina. Treatment consisted in withdrawal of the drug and the administration of digitalis, amyl nitrite, and strychnine. Quinine blindness was very similar to that caused by the salicylates or by antifebrin and the retinal changes observed were very similar. Iodoform occasionally, when absorbed from the dressings of wounds and burns or after administration by the mouth, produced amblyopia. Alcoholic amblyopia was produced by ordinary alcohol and in a more intense degree by methyl alcohol. Two drachms of the latter had been known to cause blindness. In about 90 per cent. of cases of amblyopia from methyl alcohol vision was found to be permanently damaged. Essence of Jamaica ginger, bay rum, and essence of peppermint all produced the same results because methyl alcohol was their main ingredient. Treatment in early cases should be directed to the production of sweating by the administration of pilocarpine and to the hypodermic injection of strychnine. About 10 per cent. of the patients recovered some degree of sight after treatment. As regards tobacco Professor Schweinitz states that "certain strong forms of tobacco, particularly if smoked in a pipe or on an empty stomach, were specially liable to give rise to amblyopia." Usually some years elapsed before vision was thus affected, the patient passing through a prodromal period during which an indescribable haze or fog seemed to obscure vision. Ophthalmoscopic examination at this stage disclosed pallor of the optic disc and the field of vision showed a central scotoma for red and green. If the patient was addicted to alcoholic intemperance a more rapid and marked degree of blindness followed. Histological investigation showed that the retinal ganglion cells in the macula lutea underwent degeneration and that the same change could be traced in the macular fibres of the optic nerve. The actual agent which caused this has not yet been isolated owing to the many active principles present in tobacco besides nicotine, for the latter was not the sole cause of the symptom. In diagnosis it was necessary to look for the possible presence of disseminated sclerosis and Bright's disease, as both amblyopia and central scotoma, as referred to above, might be due to either of these diseases. Among forms of amblyopia due to occupation were those occurring among lead and rubber workers, the poison in the latter class of cases being the carbon disulphide used as a solvent for rubber. Amblyopia in lead or rubber workers developed gradually after a few months' exposure to the lead or to the carbon disulphide. Workers in hat factories and manufacturers of varnish sometimes developed amblyopia from inhaling the fumes of methyl alcohol used as a solvent for shellac and varnish. Amblyopia was also met with as the result of being exposed to, or inhaling, the fumes of nitro- or dinitro-benzene, a substance prepared in chemical factories and commonly known as essence of almonds.

THE SANITARY INSTITUTE.

THE Sanitary Institute is doing good work and making satisfactory progress and amongst its members are some of the foremost representatives not only of medicine but of the collateral sciences also. During late years the membership has substantially increased and branches it is hoped will soon be instituted in India and in New Zealand and other colonies. The institute has the advantage of having the support of the medical, chemical, and engineering professions, so that the subjects discussed at its meetings are approached from several points of view. Essentially its object is to promote the advancement of all that pertains to public health matters. That the Sanitary Institute possesses an influential patronage was obvious from the presence of several distinguished persons on the occasion of the coronation dinner which took place on June 2nd at the Midland Grand Hotel, when the Duke of Northumberland—vice-president of the institute—occupied the chair. Amongst those on the right and left of his Grace were Sir Joseph Fayrer, Sir Henry Norbury, Surgeon-General W. Taylor, Sir Francis S. Powell, and Mr. A. Wynter Blyth. The speeches related to many interesting questions of sanitary and social science. In proposing the toast of "The Sanitary Institute" the Duke of Northumberland described how he had paid a morning visit to the Parkes Museum in Margaret-street. He compared it to a well-stuffed carpet bag and declared that he was distressed to notice that the interesting collection was set out to so little advantage. That defect was, however, to be remedied, and £8000 had been subscribed towards securing a suitable building. His Grace particularly warned the members of the Sanitary Institute not to rely too much upon Parliament. The public, he said, were always imagining that new legislation was going to do what they wanted and in the matter of the housing of the working-classes that tendency was especially noticeable. He advised local authorities to use to the full the powers they already possessed before seeking to secure new

legislation. He then discussed the question of water-supply and pointed out the danger of thinking that legislation which might undoubtedly be good for one part of the country was necessarily good for another part. He took as an example of this the well-known fact that the temperance question would never be solved until it was recognised that one kind of action was necessary in the country and another in the towns. The very varying requirements in different parts of the country had to be taken into consideration and he urged his hearers not to depend too much upon county councils placing themselves in the position of water companies. Mr. Wynter Blyth, in replying to the toast, congratulated the members on the fact that in a few months they would number 3000. The work of the institute had spread to the colonies and when branches were established in India and New Zealand the institution would become imperial and he would propose to alter the title to the Imperial Sanitary Institute. Special interest was attached to the speeches by the Director-General of the Royal Navy Medical Service and the Director-General of the Army Medical Service, both of whom referred to the enormous difficulty of enforcing sanitary principles during a big campaign such as that through which we had just passed. The education of the soldier and the blue-jacket was the only method which would effectually protect them. The dinner was well attended.

A BOROUGH COUNCIL COME TO JUDGMENT.

THE Poplar Borough Council appears to be a body that not only enjoys strong opinions but also does not scruple overmuch in expressing them on occasion. We hasten to add that the particular opinions to which we refer are in the main sound and just, though in venting them too slight a consideration was shown for the difficulties and for the reputation of medical men whose actions had not been in accord with the views of the borough council. The Poplar Borough Council very laudably provides means for testing the diagnosis of, among other diseases, diphtheria. A practitioner, however, within the jurisdiction of the council notified a particular case as diphtheria without having availed himself of the tests supplied by that body. As it turned out, the patient, who was removed as infectious, was not suffering from diphtheria or from any notifiable disorder. In its perhaps righteous indignation the council, it seems to us, "doth protest too much." To begin with, although everyone will admit the value of bacteriological aid in diagnosing diphtheria yet no one would be wise to maintain that there are not plenty of instances in which the diagnosis can be perfectly justifiably made upon clinical evidence alone. Such may have been the case on the occasion to which we refer. Moreover, feeling thus secure of his diagnosis without further help the practitioner may have thought it of great importance that no time should be lost in removing the patient. He may well have considered that it would be a greater advantage to gain time in isolating the case, supposing it to be infectious, than to establish the innocence of the complaint if it was not. Many circumstances may combine to determine a correct line of conduct in cases like these, and while one set of effects of action appeals most strongly to the borough council another set may assume a more prominent position in the mind of a medical man. It is often hard for the layman to realise the difficulty that there may be in distinguishing between diseases that are essentially different in nature and vastly different in the gravity of their results. To the uninstructed it very likely seems strange that there are many cases in which an "ordinary sore-throat" may be almost indistinguishable from so formidable and familiar a malady as diphtheria. Yet every medical man is aware that to make the distinction decisively and at a first examination may be difficult, if not impossible. Nevertheless, it is, of course, all-important to arrive at such a decision at once when there is involved the question of removing a patient who is in a position to infect a large number of other persons. Such a consideration may conceivably excuse even the neglect of precautions admirably provided by a well-advised and energetic borough council.

ALBUMINOUS EXPECTORATION AFTER PARACENTESIS THORACIS.

IN the *American Journal of the Medical Sciences* for April Dr. David Riesman has recorded a case of a very rare complication of paracentesis thoracis—profuse albuminous expectoration. The first case was published by Pinault in 1853. Subsequently cases have from time to time been recorded by continental, British, and American writers. In Pinault's case the patient was a man, aged 34 years, who had had for three months left pleural effusion. Three litres of fluid were removed and the dyspnœa was at once relieved. In the evening the dyspnœa recurred and about a pint of albuminous fluid was expectorated. In 1873 Terillon in his *Thèse de Paris* reviewed the whole subject and collected 21 cases, of which two were fatal. In the case now described by Dr. Riesman the patient was a woman, aged 48 years, who had suffered from cough and occasional attacks of dyspnœa for six months. For some time there had been slight dysphagia. On examination signs of right pleural effusion were found. The neck was enlarged and the natural depressions were obliterated. Above the inner end of the right clavicle was a hard gland. Paracentesis was performed in the seventh intercostal space and posterior axillary line. Three pints of somewhat turbid yellowish fluid were withdrawn. When a little less than a quart had been removed the patient began to cough. At first the cough was dry but towards the end of the paracentesis a little frothy fluid was brought up. As the face became blue and the cough more intense the paracentesis was stopped. During the following six hours about five ounces of turbid amber-coloured fluid covered with a layer of froth half as thick as the fluid and containing a few streaks of blood were expectorated. The patient then was much more comfortable than before the paracentesis. The expectoration, but not the cough, had diminished. Moist râles were heard over the whole of the right lung. On the following day there was a little cough, the dysphagia had ceased, and the right chest was resonant. A fortnight later paracentesis was again necessary and about a quart of fluid was removed. Severe cough again occurred but it was accompanied by only a little tenacious serum. A large hard gland was found above the left clavicle. Over the sternum there was dulness which extended about two inches beyond the left border. Tumour of the anterior mediastinum, probably sarcoma, which was obstructing the veins returning blood from the right pleura, was diagnosed. 12 days later paracentesis yielded more than three pints of fluid. It was followed by severe spasmodic cough but there was no albuminous expectoration. A fortnight later the patient died. At the necropsy sarcoma of the anterior mediastinum was found. The albuminous fluid expectorated was of specific gravity 1018 and congulated on boiling into a solid mass. In the recorded cases the albuminous expectoration seldom occurred during the paracentesis but generally after an interval varying from a few minutes to half an hour. In rare instances the interval was two hours; in one case it was 18 hours. The symptoms are as follows. The feeling of relief following the paracentesis is terminated by cough and dyspnœa. The cough quickly becomes severe, expectoration increases, and there is a terrible sense of oppression and orthopnœa. Respiration is laboured, the face is cyanosed, the skin is clammy, and the

pulse is weak and rapid. The coarse and fine râles of pulmonary œdema are heard. In mild cases the symptoms gradually diminish, sometimes, however, not for 24 hours. In extreme cases the fluid gushes from the nose and mouth in a constant stream and not infrequently death from asphyxia occurs. The amount expectorated varies; not rarely a pint, or even a quart, of fluid is brought up in two hours. The duration of the attack usually is from one to two hours, but six, 12, 24, and even 48 hours have been recorded. The fluid on standing generally separates into three layers—frothy, opalescent and yellowish, and viscid. In the cases recorded the effusions were usually acute. The amount withdrawn was usually large—from 2000 to 5500 cubic centimetres. Œdema of the lung on the affected side, sometimes of both lungs, was the principal condition found on necropsy. The albuminous expectoration is probably due to pulmonary œdema. The compressed lung is suddenly released from pressure. Dr. Riesman suggests that there is a great afflux of blood, a sort of "congestion by recoil," and that the vessels which have been altered by prolonged pressure are more permeable and allow exudation into the alveoli which is expectorated. Heart disease and morbid conditions of the opposite lung hindering expansion are predisposing causes. In all cases, but particularly when these complications are present, aspiration should be performed slowly. If the effusion is large the amount withdrawn at one time should be moderate.

THE OPERATIONS IN CHINA, 1900-1901.

IN the second, and concluding, part of the report to which we alluded recently[1] Dr. Jacquemin has little to say in favour of the British medical arrangements in China during the recent operations. "It would be unjust," he says in his exordium, "to judge the sanitary department of the English army by the specimens which we have before our eyes here in China. That nation is almost entirely represented by the Indian army, and, as everyone knows, the whole of the old, obsolete *matériel* is sent to India to be used up." Dr. Jacquemin, having sounded his pitch, goes on to make some more remarkable and equally well-founded observations! The medical *personnel* of the British force was drawn from two sources—the Indian Medical Service and the Royal Army Medical Corps. The officers last mentioned, few in number, were exclusively attached to the European troops, and took, moreover, every precaution to avoid being confounded with their comrades of the Indian army. The British sanitary "formations," continues Dr. Jacquemin, "are sufficiently analogous to old French models," but he feels bound to add that with regard to *entretien* "they leave much to be desired." The instruments had wooden handles and the cases apparently dated from a period anterior to Lister. The stretchers used by the British were identical with those long since abandoned in the French army on account of their weight and lack of solidity. For long distances a species of closed litter was employed which, in the critic's opinion, was none other than the French naval *hamac*, only twice as heavy. From the detailed description, however, we seem to recognise a much older appliance—the common or Indian dooly. It was a member of our own Parliament who once upon a time evolved the "ferocious dooly" which pounced down upon a wounded soldier and carried him off to its den, so perhaps we ought not to smile beyond measure. A little further on Dr. Jacquemin draws a pathetic picture of a Sikh soldier in hospital wrapped up in blankets and lying on a haphazard framework supported by four feet with nothing to protect him from a network of stretched cords save a meagre *paillasse*. The description is perfect, but that the critic's pity is quite wasted anyone who has been in India will know. A charpoy in the eyes of a native of Hindostan forms a most luxurious bed. It is only fair to Dr. Jacquemin, however, to admit that his criticism does not invariably damn with faint praise. Speaking of drugs and appliances he says: "The supply of medicaments seems abundant and obviously approaches ours from the point of view of its composition." In addition to our own, the medical arrangements of the German, American, Italian, Japanese, and Russian armies are described at considerable length, and for the most part favourably. Dr. Jacquemin finds himself unable, however, to endorse the view of his subordinate, Dr. Machenaud, which we recently mentioned,[2] regarding the good quality of the compressed drugs employed in American military hospitals. The question has been for a long time under consideration in the Central Pharmacy of Paris, and, according to Dr. Jacquemin, compression is incontestably the cause of molecular changes which impair the exact composition of the medicaments. So far the number of drugs susceptible of being used in a compressed form is very small. Dr. Jacquemin's remarks on the English and Russian medical departments in China are supplemented by Surgeon-Major Visbecq, whose short addendum, in the opinion of his chief, was so full of interest that it deserved publication *in extenso*. Surgeon-Major Visbecq limits his remarks to matters of detail, selected apparently at random. As he himself observes, some of them are the result of a "coup d'œil rapide," while in his Russian section he says: "It was only given me to see the material of a temporary hospital of the second line." Under the heading "Field's hospital" he, in his turn, describes a dooly which he qualifies as well adapted for a hot, pluvial country, only rather heavy and quite unsuitable for difficult roads. In Afghanistan, Chitral, Burmah, and elsewhere the roads cannot be called easy and yet the doolies manage to surmount them.

[1] THE LANCET, May 24th, 1902, p. 1485.

EXPERIMENTS ON LIVING ANIMALS.

THE recently issued Parliamentary paper dealing with experiments performed on living animals during the year 1901 should calm the agitation, were it possible, of hysterical foes to scientific progress. To begin with, out of 257 licensees 56 performed no experiments at all. That licences and certificates have been granted and allowed only upon the recommendation of persons of high scientific standing and that the licensees are persons who by their training and education are fitted to undertake and to profit by experimental work would probably give little comfort to the confirmed anti-vivisectionist who sees—

> "In every hand a knife,
> In every knife a villainous intent."

Yet even the "anti-" fanatic should be appeased by the sober and satisfactory statements of the inspectors, Mr. G. D. Thane and Sir Thornley Stoker, which show that in no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anæsthetics. As a matter of fact a very large proportion of the 11,645 experiments reported upon were mere inoculation experiments, associated with no immediate pain at all. When painful consequences ensue a condition attached to the licence requires that the animal shall be killed under anæsthetics as soon as the main result of the experiment has been attained. In a very large number of inoculation experiments the results are negative and, as the inspectors state, the animals suffer no inconvenience whatever from the operation. A large proportion of these inoculation experiments are necessitated by the requirements of the authorities responsible for the care of the public health. Inoculations are frequently essential for diagnosis, especially of tuberculosis, anthrax, glanders, rabies, and bubonic

[2] THE LANCET, Feb. 22nd, 1902, p. 546.

plague. Five licensees, it is interesting to read, performed 2636 inoculation experiments for testing antitoxins. Everywhere, the inspectors state, the animals were "suitably lodged and well cared for," and the report throughout makes it obvious to any fair-minded individual that not only is great care taken in the admission of investigators to the privilege of a licence but also that no step is missed to insure the experiment being performed with the greatest possible consideration and humaneness.

THE DISTRIBUTION OF PLAGUE.

THE report of the medical officer of health on the state of plague in Cape Colony for the week which ended on May 10th states that during the period under notice 2 cases were admitted to hospital, 2 persons were found dead, 3 persons died (including persons found dead), 1 patient was discharged cured, and 6 cases remained under treatment on May 10th. For the week which ended on May 31st 52 cases of bubonic plague and 50 deaths were reported at Hong-Kong.

A GAELIC MEDICAL MANUSCRIPT OF THE SIXTEENTH CENTURY.

MEDICAL readers of Gaelic, and perhaps students of the Celtic language in general, will find something to interest them in the April number of the *Caledonian Medical Journal*. In the Manuscripts Department of the British Museum there is an old Gaelic MS. written upon vellum and catalogued as "Additional 15,582," which came into the possession of the Museum by purchase in the year 1845. Dr. H. Cameron Gillies of London, a well-known Gaelic scholar, has examined this work and made extracts from it, together with annotations, a commentary, and translation which fill about 50 pages of the above-mentioned journal. The bulk of the extracts are printed in letter-press with Gaelic or Celtic characters, but there are also five pages of extremely clear and distinct photographic reproductions of portions of the original. Dr. Gillies states that the manuscript bears the date 1563 and belonged to a remarkable family of Highland physicians who were named Beatons or Macbeths and were famous in the medical tradition of the west and north of Scotland. The language of the manuscript is pure Scottish Gaelic and is similar to the language of Argyllshire and the west of Scotland at the present day. Dr. Gillies discusses the question of Irish linguistic forms and affinities at some length.

THE MIDDLESEX HOSPITAL.

AT a meeting of the court of governors of the above hospital held on May 29th an interesting account was presented by the Weekly Board. The "Précis of Transactions" contained many important items. The existence of a clinical laboratory is now a necessity in every large hospital and consequently the establishment of one at Middlesex Hospital supplies a want that has been severely felt. The court at once sanctioned the arrangements that had been suggested by the medical staff. Amongst other improvements that have been undertaken is the conversion of the old "Laffan" ward into a special operating theatre for gynæcological cases. A new laundry is in course of erection and is approaching completion at Hendon and an extension is being made to the nursing home. It thus will be seen that the authorities of the Middlesex Hospital are energetically maintaining the hospital in the state of efficiency of which they have always been proud and that they do not hesitate to undertake any alterations which are likely to prove of advantage in the treatment and care of the patients. The first volume of "Reports from the Cancer Research Laboratories" is now in the press and will shortly be issued. The staff of the laboratories is now engaged on a second volume of the reports which the director hopes to have ready for the press before the end of the year. The board has at present under its consideration recommendations from the Cancer Investigation Committee as to the provision of additional laboratory accommodation and an increase in the present staff of the laboratories. As is well known, there are exceptional facilities for the study of cancer in all its aspects at this hospital and the present arrangements will not allow full use to be made of the large quantity of material available for investigation. We sincerely echo the wish of the board that this work will not be kept back for want of funds. The work which has already been accomplished has received recognition by the committee appointed by the Royal College of Physicians of London and the Royal College of Surgeons of England, and doubtless the department will benefit by the fund which is now being collected to further a systematic investigation of cancer—a work in which His Majesty the King takes the greatest interest.

RARE AND UNUSUAL FORMS OF LEAD POISONING.

WORKERS in lead and lead ores and those who have to handle or to mix paints containing lead are well known to be liable to suffer from lead poisoning. It is stated that no case is recorded of a child having had symptoms of lead poisoning from playing with "tin" soldiers, though children are in the habit of putting them in their mouths. In the *Progrès Médical* of May 10th Dr. Variot, however, records the case of a child who developed paresis of the lower extremities and other symptoms pointing to lead poisoning. It was found that a toy trumpet with a metal mouthpiece in which there was lead to the extent of 88 per cent. was used by the child and was the source of the poisoning in question. In a recent "Thèse de Paris" Dr. Mabit states that he has observed cases of lead poisoning from bullets which had lodged in the body and had not been extracted. Usually in such cases, says Dr. Mabit, no symptoms of saturnism arise because the bullet becomes encapsuled in a firm and dense coating of fibrous tissue and thus remains "isolated." Occasionally, however, portions or fragments of it undergo solution and absorption into the blood and thus bring about symptoms of lead poisoning. Among the cases recorded by Dr. Mabit is one of a young French soldier who was wounded by a bullet received in the war of 1870 during the siege of Paris. The bullet lodged itself deeply in the nape of the neck and was not extracted. Two years later he began to suffer from anæmia, and later, in 1874, violent abdominal pains and colic followed. These symptoms continued from time to time until 1880, when attacks of gout and of eczema supervened. These troubles were all traceable to lead poisoning from the bullet embedded in the patient's neck. The cases above recorded are of interest as illustrating some of the rarer forms of lead poisoning.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.

THIS association gave a most successful dinner at the Café Royal on May 29th at which some 70 members and guests were present. The President of the association (Dr. Frederick S. Palmer) occupied the chair and was supported by Sir William Selby Church, Bart., President of the Royal College of Physicians of London; Sir George Hare Philipson, President of the University of Durham College of Medicine; Dr. James Little, ex-President of the Royal Academy of Medicine, Ireland; Surgeon-General W. Taylor, C.B., Director-General, Army Medical Service; Mr. A. Wynter Blyth, President of the Incorporated Society of Medical Officers of Health; Sir James Crichton Browne; Dr. W. H. Allchin, President of the Medical Society of London; Dr.

Burton Brown, Master of the Apothecaries' Society; Dr. F. G. Penrose, Dr. Ernest White, Dr. G. Danford Thomas, Dr. H. D. Rolleston, Mr. P. J. Freyer, Mr. Thomas Wakley, jun., and others. The President gave the toasts of "The King," "The Queen, and other Members of the Royal Family," and "The Navy, Army, and Reserve Forces." To the latter Surgeon-General Taylor replied. Sir James Crichton Browne proposed "The University of Durham" in eloquent terms and Sir George Hare Philipson, who received quite an ovation, replied. The toast of "The Durham University Medical Graduates' Association" was given by Dr. William Travers and Dr. T. Outterson Wood, honorary secretary for the south, in reply, congratulated the association upon its rapidly increasing numbers, now reaching nearly 500 members, and also upon the highly satisfactory condition of its finances. Dr. A. H. Robinson proposed the toast of "The Guests" and Sir William Church, replied. Dr. Allchin proposed the health of "The President" in felicitous terms and congratulated him upon the dignity, eloquence, and urbanity with which he had presided over the evening's proceedings. The musical arrangements, under the management of Mr. Arthur E. Godfrey, were admirably carried out and added greatly to the enjoyment of the evening. The next annual meeting will be held at Durham University and the annual dinner will be given in the fine old hall of University College, Durham, in September next.

THE PREVALENCE OF SMALL-POX.

THE following figures show the number of patients admitted to the various small-pox hospitals of the Metropolitan Asylums Board for the dates mentioned:—On Saturday, May 31st, 30 cases; on Sunday, June 1st, 16 cases; on Monday, June 2nd, 33 cases; on Tuesday, June 3rd, 26 cases; and on Wednesday, June 4th, 30 cases. At a meeting of the Metropolitan Asylums Board held at the offices on the Embankment on May 31st it was stated that during the fortnight which ended on Thursday, May 29th, 580 small-pox patients had been admitted to the Board's institutions, as compared with 478 in the preceding two weeks; 78 had died, as compared with 91; and 577 had been discharged recovered, as compared with 467; the total number remaining under treatment being 1319, as compared with 1394 a fortnight before. For the week ending May 31st 25 cases of small-pox were notified in the county of Essex.

THE DISCUSSION ON LEPROSY AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

THE discussion on leprosy at the Royal Medical and Chirurgical Society next Tuesday is likely to be of exceptional interest. Dr. Hansen of Bergen is expected to be present and will probably take part in the debate. Two important papers were read at the last meeting when time did not allow of any discussion. Mr. T. J. Tonkin, who deals with the Soudan district, upholds the opinion that a poor diet, chiefly of vegetables, is a very important predisponent, whilst Mr. J. Hutchinson contends that no predisposition is necessary and that the bacillus is introduced into the system by means of badly cured fish. Both admit that the disease is communicable from person to person but both regard diet as of primary importance and place contagion in a second position. Mr. Hutchinson believes that the transference is effected solely through the stomach and never by touch or inhalation.

THE late Mr. Gassiot has by his will, after many pecuniary and specific bequests, left the residue of his estate to St. Thomas's Hospital; the sum in question will probably eventually prove to be a very large one but the hospital will only benefit partially at present. We congratulate the hospital authorities as we understand that money is very much needed in order to keep pace with the demands of the time.

AT a meeting of the Society of Apothecaries of London, held on May 13th, the Court of Assistants passed the following resolution—"That as from 1st July next every candidate for the examination in medicine shall be required to produce a certificate or evidence of having received instruction in the administration of anæsthetics to the satisfaction of his teachers at a recognised medical school and hospital."

THE President and Council of the Ophthalmological Society of the United Kingdom are issuing invitations to a dinner which will take place at the Trocadéro Restaurant, Piccadilly-circus, London, W., on Friday, June 13th, at 7.30 P.M. Communications concerning the dinner should be addressed to the headquarters of the Society, 11, Chandos-street, Cavendish-square, W.

THE annual banquet of the Association of British Postal Medical Officers "to meet the Most Honourable the Marquis of Londonderry, K.G., His Majesty's Postmaster-General," will take place on Thursday, July 17th, at 7.30 P.M., at the Whitehall Rooms, Hôtel Métropole. The honorary secretary is Dr. Ritchie Giddings, Mansfield-road, Nottingham.

THE President, Council, and professors of University College, London, are issuing invitations to a conversazione which will be held on Thursday, June 19th, at 8.30 P.M. Communications regarding it should be addressed to the Secretary, University College, London.

THE summer session of the General Medical Council came to an end on Tuesday afternoon. The pressure on our space caused by the issue of the Hospital Sunday Fund Supplement has prevented us from completing our report this week.

THE METROPOLITAN WATER-SUPPLY: THE LONDON WATER BILL.

ON May 27th the Joint Committee of the two Houses of Parliament resumed its consideration of the London Water Bill. All the members of the Committee were present and Lord BALFOUR of BURLEIGH presided. Clause 18 came under consideration. This clause, it may be remembered, deals with provisions as to arbitration. It provides that under the Act—

> A Court of Arbitration shall be constituted, consisting of three Commissioners; and the Right Honourable Sir Edward Fry, Sir Hugh Owen, G.C.B., and Sir John Wolfe Barry, K.C.B., shall as from the appointed day be the Commissioners.

Sub-section 2 makes provision for filling a vacancy in the Court of Arbitration should one arise from "death or incapacity or otherwise." The power of appointment is vested in the Local Government Board.

The first amendment to Clause 18 was moved by Mr. PEMBER, K.C., on behalf of the metropolitan water companies. It was proposed that certain words should be added to Sub-section 1 and be an instruction to the effect that "the Commissioners shall sit together but the decision of the majority shall be binding."

In support of this amendment Mr. PEMBER called attention to Sub-section 8 of the clause which provides that "the Court of Arbitration may act by two of their number and notwithstanding any vacancy."

Mr. FITZGERALD, K.C., on behalf of the Local Government Board, declined to accept the amendment on the ground that such a provision would make it necessary that the three arbitrators should sit in every case. From this it followed that the illness of one arbitrator would cause a suspension of

the proceedings and the resignation or death of one would necessitate the re-hearing of the case.

The Committee declined to accept the amendment.

Sub-section 5 of the clause was omitted on the motion of Mr. FITZGERALD. This sub-section dealt with inquiries held for the purposes of the Act, and it was stated that the Local Government Board proposed to insert "more suitable provisions" at a later period.

Sub-section 7 was the cause of prolonged argument. It provides that—

> Every award, order, and other instrument made by or proceeding from the Court of Arbitration shall be binding and conclusive to and for all intents and purposes, and shall have the like effect as if it had been made by a judge of the High Court, and shall be acted on, obeyed, executed, and enforced accordingly. No such award, order, or other instrument shall be removeable by any writ or process into any of His Majesty's Courts, and the proceedings or acts of the Court of Arbitration shall not (except as hereinafter expressly provided) be liable to be interfered with or questioned by or in any court, or elsewhere, by way of mandamus, prohibition, injunction, or otherwise:
> Provided that the Court of Arbitration may at any stage of the proceedings at an arbitration, and shall, if so directed by the Court of Appeal, state, in the form of a special case for the opinion of the Court of Appeal, any question of law arising in the course of the arbitration.

On behalf of the metropolitan water companies it was contended that in this sub-section the words "under the Act" should be introduced, and that without the modification of these limiting words there would be no means of questioning any award of the Court of Arbitration, however wrong such an award might be. Under this sub-section it was proposed that an absolutely arbitratory power should be given to the court.

Mr. CLAUDE BAGGALLAY, K.C., contended that the sub-section under consideration made provision for three things: (1) that every award of the court should be binding; (2) that no such award could be removed into His Majesty's courts; and (3) there was a limited proviso concerning appeal in cases of questions of law. He contended that there should be a right of appeal to the House of Lords.

Mr. FREEMAN, K.C., who represented the London County Council, supported Mr. Baggalay's contention. In this Bill it was proposed to do away with the ordinary rights which every litigant would have in any case, however small, although in this case the property dealt with probably involved the largest pecuniary transaction which had ever been referred to arbitration. Lord Balfour of Burleigh had suggested that an appeal might cost the loss of much time. He (Mr. Freeman), however, thought that as soon as it was decided that the water companies must part with their undertakings it would be to their interest to settle the whole matter up and to hand over their stock. It was no less to the interest of the purchasing authority to take over their duties with as little friction as possible. There would, therefore, he contended, be no unreasonable delay, and it was desirable that the ordinary privileges given to litigants should be preserved. He pointed out that the Court of Arbitration was composed of human beings but would make no further reflection on the court.

On behalf of the Local Government Board Mr. FITZGERALD observed that counsel for the water companies and for the London County Council appeared to have forgotten the position of arbitrators in an ordinary case of arbitration. An arbitrator was absolute judge of the facts and there was no appeal from his decision as to the facts; he was also absolute judge of the law unless he stated a case for the opinion of the court, and he might be ordered by the court to state a case should the court come to the conclusion that a question of law had arisen before them. In the present Bill similar provisions had been made. The arbitrators might state their award in the form of a special case; they might state any points arising for the opinion of the courts and they were compelled so to state a case should the Court of Appeal so direct them. An amendment to the sub-section would also be introduced by the Local Government Board that there might be an appeal to the House of Lords should leave to do so be granted by the Court of Appeal. The jurisdiction of the arbitrators ought not to be unduly curtailed and the amendments proposed by the water companies, supported by the London County Council, might indefinitely delay the settlement.

After a deliberation on the question raised, Lord BALFOUR of BURLEIGH announced that the Committee was very evenly divided in opinion concerning it. The powers which it was proposed should be given to the Court of Arbitration were very wide; no exact precedent had been brought forward in favour of the bestowal of such powers and possibly no precedent for such a course could be found. The Committee, however, was of opinion in regard to the proposed amendments that they would be likely if adopted to lead to undue delay in the settlement of the matter. The Committee declined to insert the words "under the Act" and suggested that the representatives of the Local Government Board, of the water companies, and of the London County Council should confer and should try to come to an agreement as to the amendment of the clause.

Sub-section 8 then came under consideration. It provides that—

> The Court of Arbitration may act by two of their number and notwithstanding any vacancy in their number. Subject as aforesaid, the court may regulate their own procedure and the procedure at an inquiry held by a commissioner or officer of the court.

On behalf of the metropolitan water companies Mr. CLAUDE BAGGALLAY proposed that these words should be added at the end of the sub-clause: "No metropolitan water company shall be prejudiced by the decision of any question in any arbitration to which it is not a party."

In the course of his speech Lord BALFOUR of BURLEIGH asked the learned counsel if he were not assuming an entire want of intellect on the part of the arbitrators. Finally, the Committee declined to accept the amendment.

Sub-section 9 was next taken into consideration. In the Bill this sub-section was as follows:—

> In determining the amount of water stock to be issued to any metropolitan water company the Court of Arbitration shall not make any allowance in respect of compulsory sale, and shall not take into account any enhancement or depreciation of the market value of any stock or shares of the company which in the opinion of the court was caused by or resulted from the passing or the anticipation of the passing of this Act, but the court may make such allowance as they think just for covering any expenses which have been or are likely to be incurred in consequence of the passing of this Act, and which ought in the opinion of the court to be borne by the Water Board.

On behalf of the metropolitan water companies Mr. PEMBER proposed the following amendment:—

> That the Court of Arbitration shall award to each company compensation for the transfer of its undertaking as if, with the necessary modifications, the law of compensation for the purposes of the Lands Clauses Acts were applicable to the case.

The Committee sat on May 28th when the question of recoupment to the water companies' shareholders came under discussion.

At the sitting on May 29th the chief matters which came under consideration were connected with the property in, and custody of, the books and documents of the water companies.

THE NEW GOVERNOR OF WEI-HAI-WEI.—The Hon. J. Haldane Stewart Lockhart, C.M.G., Colonial Secretary of the Colony of Hong-Kong and Rector of Hong-Kong College of Medicine for Chinese, was presented, by the Members of the Court, the Senate, and the General Council, and the past and present students of the college resident in the colony, with an extensively signed address bound in a handsome cover faced with silver, in the Legislative Council Chamber at Hong-Kong, on April 18th, 1902, on the occasion of his impending departure from Hong-Kong to take up the Governorship of Wei-Hai-Wei. His Excellency Major-General W. J. Gascoigne, the officer administering the government of the colony of Hong-Kong, presided at the meeting and was supported by Dr. Francis W. Clark (dean of the college) and other well-known local men. The Hong-Kong College of Medicine for Chinese was founded in 1887 by Dr. Patrick Manson, C.M.G., when Mr. Stewart Lockhart accepted the office of treasurer which he held until 1895, when he was elected to succeed his Honour Sir Fielding Clarke, Chief Justice, as rector of the college. Mr. Stewart Lockhart said in the course of his acknowledgment of the address that the Government had at last recognised the value of the work of the college and that in this year's estimates was inserted a sum which would allow of a slight honorarium being given to the prosecutors of the work. The Government had also undertaken to establish a dispensary in the western part of Hong-Kong. He added that graduates of the college would be useful in helping the Government to instruct the natives in sanitary matters, although at present students who had qualified in the college were immediately employed by the Government of the Straits Settlements, to whom Mr. Lockhart had written asking them to join the Hong-Kong Government in the establishment and maintenance of a medical college.

REPORT OF

THE LANCET
Special Commission
ON
GLYCERINATED CALF VACCINE LYMPHS:

GIVING THE NUMBER AND NATURE OF THE "EXTRANEOUS" BACTERIA FOUND IN THE COMMERCIAL VACCINE LYMPHS.

OUR investigations into the purity and activity of vaccine lymphs undertaken by us two years ago have been renewed and continued.[1] As on a former occasion, all the vaccines on the market have been examined as well as a sample of the Local Government Board lymph. In addition to these one obtained from an Italian source has also been dealt with. In all cases these lymphs have been examined bacteriologically and in most some additional information has been obtained as to their vaccinal activity. The net result of our inquiry is to confirm in all essentials our previous report.

(1)

JENNER INSTITUTE FOR CALF-LYMPH,

73, CHURCH-ROAD, BATTERSEA, LONDON, S.W.

(AGENTS: ALLEN AND HANBURYS, LIMITED, PLOUGH-COURT, LOMBARD-STREET, LONDON, E.C.)

Received three tubes of aseptic glycerinated calf-lymph, No. 3210, on Jan. 17th, 1902. This lymph is said to be "prepared strictly in accordance with the methods advocated by Dr. S. Monckton Copeman." Agar and gelatin plate cultivations were made on Jan. 22nd and an anaerobic glucose formate agar shake cultivation was made on the same date. The results obtained were not so good as were those obtained on a former occasion. The agar plate was overgrown with organisms at the end of 24 hours; there were many rapidly growing surface colonies with crenated margins and with a peculiar greenish tint characteristic of the plate as a whole. On examining these colonies some were found to be grey cloudy growths with dark brown centre, crenated margins, and wrinkled surface. Under the microscope these colonies were seen to consist of collections of thick rods, three or four times as long as broad, arranged side by side, with rounded ends and often containing spores. The second series was made up of rapidly growing, very thin, proteus-like growths with a slight bluish or greenish tinge. The long finger-like processes growing out from the margin were clubbed and usually considerably thicker than the main body of the growth. Rods similar to the above but offering no evidence of spore formation were also present. Other colonies of a third series were made up of staphylococcus albus (under the microscope, however, these organisms appeared to be somewhat larger than ordinary staphylococci). On the gelatin plate at the end of the eighth day there were about 680 colonies, only one of which liquefied the gelatin. Some of these colonies, growing very rapidly, had crenated margins. Amongst these were found isolated cocci (staphylococci), a very few minute bacilli, and a number of colonies of torulæ. In the glucose formate agar tube an enormous number of very fine colonies made their appearance in the depth of the agar; they were so numerous, indeed, that they were uncountable; no gas was formed. On the 29th a second series of cultivations—from vaccine tubes No. 3459—was made in agar and in agar heated to 60° C. for one hour in order to get rid of all but spore-bearing organisms. In the agar plate 784 colonies were developed, resembling those found on the earlier plates, whilst in the specimen heated to 60° C. for one hour not a single colony was developed.

TABLE I.—*Experiments with Lymph from the Jenner Institute for Calf-lymph.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
First sample.				
Five days	Plate overgrown.	680 (one liquefying).	Innumerable; no gas.	—
Second sample.				
Twelve days	784	—	—	0

(2)

ANIMAL VACCINE ESTABLISHMENT,

UNDER THE SUPERVISION OF DR. CHAUMIER OF TOURS, AND 10, RUE DE LATRAN, PARIS.

In the form of liquid glycerinated pulp, concentrated, and reinforced, prepared under the most minute antiseptic precautions.

Two tubes at 1*s.* 3*d.*, 25 vaccinations each, No. 6; dated sent out Jan. 17th, 1902. Agents for Great Britain, Messrs. Roberts and Co., 76, New Bond-street, London, W. This lymph when mixed with broth appears to be slightly granular and as seen in the tube has a faint pink tinge. On Jan. 23rd the vaccine in the tube was mixed with three cubic centimetres of broth; one cubic centimetre of this broth was then added to agar and a plate culture was made, one cubic centimetre was plated out in gelatin, and one cubic centimetre was added to a glucose formate agar tube. On the agar plate over 16,000 colonies developed. Some of these were large, grey, moist, opalescent colonies which were made up of short plump rods with rounded ends; these rods contained both spores and aggregations of protoplasm. Other colonies consisted of soft, slimy, opaque growths, with a sharply outlined slowly advancing margin; these were made up principally of small staphylococci (*? micrococque porcelaine*[2]); amongst these, however, were a few large rods with somewhat truncated ends. On the gelatin plate only 34 colonies developed, most of these were staphylococci. In the glucose formate agar tube thousands of colonies of very unequal size had developed. A portion of the second tube was used for the purpose of determining the presence or absence of resistant spore-bearing organisms. A definite quantity was added to agar culture medium; this was heated to 60° C. for one hour; a plate was then made. Only a couple of colonies made their appearance.

TABLE II.—*Experiments with Lymph from Dr. Chaumier's Animal Vaccine Establishment.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
One sample only.				
Six days	16,200	34	Innumerable; no gas.	2

(3)

FERRIS AND CO., BRISTOL.

Six half-tubes of "selected glycerinated calf-lymph," bearing reference No. C. 573, three tubes for 2*s.* 6*d.*, posted from Bristol on Jan. 17th, 1902. The lymph is clear and has a faint brown tinge. On Jan. 23rd an agar plate, a gelatin plate, and a glucose formate agar tube were made. In the agar 47 colonies developed; one of these a small colony with crenated edges had a reddish-green tinge. This did not grow rapidly; it was made up of rods with spores or aggregations of protoplasm. These rods were arranged irregularly side by side, three or four times as long as broad, with rounded ends. Most of the colonies consisted of typical staphylococcus albus but a few of them of very large cocci, single, in short chains, or in groups. On the gelatin plate only a single colony like that of the bacillus coli communis (translucent with a series of radiating processes at the periphery, the margins being crenated and thickened) made its appearance. On microscopical examination, however, this colony was found to be made up of staphylococci. In the glucose formate agar tube were thousands of minute colonies, which, however, like those already found in other specimens examined, did not make their appearance for a

[1] Vide THE LANCET, April 28th, 1900, p. 1227.

[2] THE LANCET, June 23rd, 1900, p. 1832.

number of days, so that at first the tubes appeared to be almost sterile; when, however, the tubes were examined on the tenth or twelfth day the number of colonies was enormous. In a cultivation examined for spore-bearing organisms not a single colony could be found; all the organisms had been destroyed at a temperature of 60° C. maintained for one hour.

TABLE III.—*Experiments with Calf Lymph from Messrs. Ferris and Co.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
One sample only.				
Six days	47	1	Thousands. No surface growth.	0

(4)

FAULKNER'S PURE RELIABLE GLYCERINATED CALF VACCINE LYMPH,

16, ENDELL-STREET, LONG ACRE, LONDON, W.C.

This lymph is slightly opaque and has a faint red tinge; "Source, W.F.H., 2" (three tubes for 2*s.* 6*d.*). It was not dated but arrived on Jan. 18th, 1902. On the 23rd the usual cultivations were made. On the agar plate about 200 colonies developed. Some of the colonies were white, pearly, or glistening and opalescent. They were made up principally of faintly stained long thin non-sporing rods with square-cut or slightly rounded ends. A second series consisted of spreading ground-glass-like colonies with fairly sharply-marked slightly-crenated margins; these colonies were made up of well-stained rods, three or four times as long as broad, with rounded ends, placed side by side fairly regularly; the protoplasm was collected into little aggregations but no distinct spores could be made out. Most—340—of the colonies growing in gelatin resembled the staphylococcus albus, both to the naked eye and microscopically. There were two liquefying colonies and 15 moulds. In the glycerine formate agar tube there was a well-defined potato bacillus on the surface of the medium: some hundreds of anaerobic colonies made their appearance in the depth of the medium. In the agar heated to 60° C. for one hour only six colonies developed on the plate.

TABLE IV.—*Experiments with Faulkner's Pure Reliable Glycerinated Calf Vaccine Lymph.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Five days	200	340 (2 liquefying; 15 moulds).	600	6

(5)

DR. WARLOMONT'S GLYCERINATED CALF VACCINE.

AGENTS: MARKT BROS. & CO., 38 & 39, BEECH-STREET, BARBICAN, LONDON, E.C.

No. 8, date 17/1/02; three half tubes at 1*s.* This is a clear lymph contained in yellow tubes. An agar plate made on Jan. 22nd contained 112 colonies, mostly discrete, white, moist, and semi-opaque, consisting almost entirely of the staphylococcus albus. A gelatin plate made on the same date developed 28 colonies which consisted almost entirely of encapsuled cocci and a number of soft "painty"-looking colonies which were found to be yeasts. A comparatively small number of anaerobic colonies—from 40 to 70—grew in the depth of the glucose formate agar but there was no growth on the surface. There were no spore-bearing aerobic organisms.

TABLE V.—*Experiments with Lymph from Markt Bros. (Dr. Warlomont's Glycerinated Calf Vaccine).*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Five days	112	28	40-70	0

(6)

ESTABLISHMENT FOR VACCINATION WITH CALF LYMPH, 186, MARYLEBONE-ROAD, LONDON, N.W.

Three small tubes, No. 12,185 (price 2*s.* 6*d.*), sent by Dr. Charles Renner, 17/1/02, with the request, "Please use it as soon as possible." On Jan. 23rd an agar plate was made. At the end of six days 2000 colonies had made their appearance, most of these consisting of staphylococcus albus of a somewhat small variety. In glucose formate agar there were thousands of tiny brownish colonies growing deep down in the nutrient medium but none on the surface. The anaerobic colonies appeared to be made up of thin short rods and a number of cocci. In the tube heated to 60° C. for one hour there were three colonies, all of them spore-bearing. One, a proteus-like colony, spreading rapidly, was made up of short rods with rounded ends, the second, like the bacillus figurans, consisted of larger thicker rods, and the third, a very small round colony, consisted of curved rods and threads. A gelatin plate made on March 15th from a second sample, No. 82,610, vaccine of date 13/3/02, contained at least 1500 organisms, a single mould, and 30 or 40 liquefying organisms. Most of the organisms which did not liquefy the gelatin were of one species—the staphylococcus albus. A few of the colonies were yeasts and a number were short, delicately stained rods very like the bacillus coli communis; these were small, fairly prominent, transparent colonies; some of the rods had a distinct curve and some were C-shaped; the bulk of the organisms present were single cocci or staphylococci.

TABLE VI.—*Experiments with Lymph from the Establishment for Vaccination with Calf Lymph.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
First sample.				
Five days	2000	—	Many thousands.	3
Second sample.				
Two days	—	1500 + 30 or 40 liquefying.	—	—

(7)

THE ASSOCIATION FOR THE SUPPLY OF PURE VACCINE LYMPH,

12, PALL-MALL EAST, LONDON, S.W.

Two tubes, 4*s.* (in orange-coloured or amber glass), were received on Jan. 18th, 1902. These were dated 17/1/02 and marked: "To be used before 2/2/02. No. R. 822." This lymph is slightly opaque, very faintly blood-stained, and very granular. On the 23rd, or six days after it was sent out (one of these tubes was divided into three portions, the contents of the tube being placed into three cubic centimetres of sterile broth, the whole thoroughly mixed, and one cubic centimetre of the mixture used for each experiment), a gelatin plate was made with a third of the contents of one of these tubes. After four days 86 colonies had developed; most of these colonies were staphylococcus pyogenes albus or some organism very closely resembling and nearly allied to it, a yeast, and an iridescent and translucent colony composed of staphylococci or rather chains of diplococci. On the same day a similar quantity of this vaccine was mixed with agar and a plate was poured. On the 24th this plate was crowded with an uncountable number of organisms

consisting principally of staphylococci and diplococci in chains; there were, however, in addition to these a number of rods with rounded ends divided into three or four segments; some of these rods contained spores, in others rapid vegetative division was going on. A similar quantity of vaccine mixed with glucose formate agar gave thousands of small anaerobic colonies, especially in the depth of the tube, by the ninth day, though on the first day only about 300 colonies, facultative anaerobes, could be seen in the upper part of the medium. At a later date, Feb. 10th, a second sample, No. 1217, was obtained and heated to 60° C. for one hour. When examined two days later 30 colonies had developed in this medium; some of these had crenated margins, were opaque white, with a brownish or yellowish tinge. On microscopical examination these colonies were found to consist of banded or beaded bacilli almost like short diphtheria bacilli, but on more careful examination they were found to contain well-marked spores. It should be noted that here, as when last this specimen was examined, the number of organisms growing on the agar plate was out of all proportion to the number of those growing on gelatin.

TABLE VII.—*Experiments with Lymph from the Association for the Supply of Pure Vaccine Lymph.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Six days	Uncountable.	86	Thousands of small colonies.	30

(8)

GLYCERINATED CALF VACCINE LYMPH FROM THE INSTITUT DE VACCINE ANIMALE, PARIS.

DIRECTEURS: E. CHAMBON AND DR. ST. YVES-MÉNARD.

AGENTS FOR THE UNITED KINGDOM AND COLONIES: THE MEDICAL SUPPLY ASSOCIATION, 12, TEVIOT-PLACE, EDINBURGH.

Two 1*s.* tubes, Calf No. 2, collected 8/1/02, sent out Jan. 17th, 1902, 8 P.M., from Edinburgh. Six days later the contents of the two tubes were added to sterile broth and the mixture was carefully divided into three; with one-third of this mixture a gelatin plate was made. No colonies of any kind made their appearance. So far as extraneous organisms were concerned none had grown, even at the end of the tenth day. On a similar plate prepared on agar 38 colonies made their appearance; eight of these were large discrete white colonies, the rest were very tiny; both sets of organisms consisted of staphylococci, the first was staphylococcus albus, the second grew more like a streptococcus, but on making a microscopical examination it was found that here again we had to deal with a staphylococcus. In the glucose formate agar some thousands of minute colonies and a few

TABLE VIII.—*Experiments with Lymph from the Institut de Vaccine Animale, Paris.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Six days	38	0	Some thousands of very tiny colonies and a few large ones.	0

larger ones made their appearance in the depth of the medium; the smaller colonies consisted of very minute rods, the larger colonies of cocci. In the tube from another batch heated to 60° C. for one hour not a single colony made its appearance; we may assume, therefore, that there were no spore-bearing organisms in this sample. Taking it altogether, this is a very satisfactory sample, but it is somewhat difficult to understand the very large number of anaerobic organisms. It is evident that few of the organisms are derived from outside sources, they probably come rather from the skin of the animal, as only those that grow at a high temperature are met with.

(9)

GLYCERINATED CALF LYMPH, "PURE CULTURE BRAND," S. MAW, SON, AND SONS, 7–12, ALDERSGATE-STREET, LONDON, E.C.

Three tubes at 1*s.* This lymph was slightly opaque and granular and had a reddish tinge. It was sent out on Jan. 17th, 1902, and the tubes were plated on the 22nd. On the agar plate 30 colonies were developed, one of these being a typical staphylococcus pyogenes aureus; most of the others were staphylococcus pyogenes albus. They were opalescent or white to the naked eye but a few of them had a yellow tinge; this, however, never became very marked. A number of the other colonies had a lemon yellow tinge. On the gelatin three colonies, one of them liquefying, made their appearance; the slowly liquefying colony was made up of diplococci. In a third tube that was heated in agar for one hour at 60° C. 210 colonies developed, so that in this case we had a fairly large number of spore-bearing organisms: (1) of beaded rods and threads in which spores were not very distinctly marked; (2) smaller rods in which were well-marked spores; and (3) masses of thicker and shorter rods not developed into long threads. In the glucose formate agar from 75 to 100 tiny colonies (strictly anaerobic organisms) developed in the depth of the medium. On the surface of this medium a large, white, soft colony, very like staphylococcus albus, made its appearance.

TABLE IX.—*Experiments with Lymph from S. Maw, Son, and Sons.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Five days...	30	3 (one liquefying).	75–100	210

(10)

BIRMINGHAM CALF VACCINE ESTABLISHMENT, 204, VICTORIA-ROAD, ASTON, BIRMINGHAM.

JOHN ROUND, L.R.C.P., DIRECTOR.

Three very small green-glass tubes, containing vaccine slightly opaque, granular, and with a pink tinge, were obtained on two occasions. The first sample left Birmingham on Jan. 17th, 1902, and was plated out on the 23rd. The gelatin plate gave no growth of ordinary bacteria but five moulds developed on the surface. It is possible, however, that this was an accidental contamination as the glass capsule covering the plate was accidentally displaced for a few seconds. In glucose formate agar 50 or 60 anaerobic organisms developed. There were also four surface colonies which gave an opaque, moist, yeast-like growth. A second sample was plated out on agar on Feb. 13th, 1902; vaccine source, "Fresh 5" (Jan. 28th). In this plate 25 colonies developed, all of them staphylococcus pyogenes albus. On the same day a sample was heated to 60° C. for one hour. From this sample not a single organism was developed.

TABLE X.—*Experiments with Lymph from the Birmingham Calf Lymph Establishment.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
First sample.				
Six days	—	0 5 moulds.	50–60	—
Second sample.				
Six days	28	—	—	0

(11)

DR. HIME'S CALF VACCINE INSTITUTION,

62, HORTON-ROAD, BRADFORD, YORKS.

Supplied to the Government in Ireland, the Egyptian Army, the Crown Colonies, boards of guardians, and public vaccinators.

This lymph was contained in a small phial. In order to obtain the lymph pure and to plate it out in known quantity the neck of the phial was carefully sterilised; the lymph was then withdrawn with a sterile capillary pipette (the phial being weighed both before and after it was emptied) and was transferred to a known quantity of sterile broth. The sample used was sent out on Jan. 17th, 1902, and was dealt with on the 22nd of the same month. In the agar plate 63 colonies made their appearance; these spread rapidly but there was no increase in number after the first four days. The colonies resemble those of staphylococcus pyogenes albus, both to the naked eye and microscopically. Rapidly-growing proteus-like colonies, very thin cloudy growths with a slight bluish or greenish tinge, and processes long and finger-like and thicker than the rest of the colony growing out from the margin consisted of short thick rods with the "battalion" arrangement; they contained no spores. From a gelatin plate made on the same date 120 colonies developed; eight of these liquefied the gelatin; of these colonies two were moulds and two had the crenated margins and finger-like processes described in the colonies appearing on the agar plate; most of the colonies, however, consisted of yeasts and long thick rods—many of them sporulating—and a peculiar mycelial growth which, however, had none of the naked-eye characters of any of the ordinary fungi. In the glucose formate agar tube from 100 to 120 minute colonies developed in the depth of the medium, but there was one surface colony, apparently an organism belonging to the potato bacillus group. A second set of tubes was inoculated from another phial. In an agar plate poured from one of these 55 colonies developed. In the agar tube heated to 60° C. for one hour five colonies were seen; these consisted of spore-bearing organisms—thin rods with swollen nodal points, a yellow sarciniform organism and leptothrix filaments breaking into long rods with square-cut ends; these long rods contained well-developed spores.

TABLE XI.—*Experiments with Lymph from Dr. Hime's Vaccination Institute, Bradford.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
First sample.				
Five days	63	120 (8 liquefying).	100-120	—
Second sample.				
Nine days...	55	—	—	5

(12)

THE REBMAN PUBLISHING COMPANY,

129, SHAFTESBURY-AVENUE, CAMBRIDGE-CIRCUS, LONDON, W.C.

A sample of vaccine lymph was received from this firm on Jan. 18th, 1902. It was marked, "No. 641; 3 at 1*s.*; 17/1/02. Tubes if returned within 30 days from that date will be exchanged for fresh. Keep in a cool place." This lymph, contained in green-glass tubes, was plated out on the 22nd. On the agar plate 521 colonies developed: four of these colonies, with crenated edges, spreading rapidly, were made up of bacilli of two kinds—a thinner form very lightly stained and a thicker longer form which took on the stain deeply. The other colonies, also slightly crenated at the margins, were somewhat opaque, and at first sight had not the appearance of streptococci. On growing them in broth, however, it was found that a few streptococci were present; the bulk of the organisms were staphylococcus pyogenes albus. On the gelatin plates were 36 moulds; these developed regularly and were evidently not the result of accidental contamination of the plate. The glucose formate agar was crowded with some thousands of minute colonies. A second gelatin plate from No. 243 was made on Jan. 28th, 1902; from this 395 non-liquefying colonies and three moulds developed. Most of these colonies consisted of staphylococcus pyogenes albus. A sample of a second batch of vaccine lymph was heated for one hour at 60° C. and then plated out on agar; only two spore-bearing colonies made their appearance. These samples were more equal and the average purity was considerably higher than at the last examination of this lymph.

TABLE XII.—*Experiments with Lymph from Rebman Publishing Company, London.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
First sample.				
Five days...	521	36 moulds.	Some thousands of minute colonies; little surface growth.	—
Second sample.				
Four days	—	395 and 3 moulds.	—	2

(13)

LYMPH FROM THE LOCAL GOVERNMENT BOARD LABORATORIES.

A tube of lymph for 25 vaccinations, supplied by the courtesy of Mr. Long, was received on Feb. 8th, 1902, cultivations being made and plates poured two days later. A quantity, 0·101 gramme, of this vaccine mixed with agar was found to contain 24 colonies when plated out; some of these were thick, white, opaque, and paint-like; they were very unequal in size but all consisted of torulæ. A peculiar iridescent colony was composed of staphylococci; the other colonies, thick, brownish-yellow in colour, with smooth margins, all consisted of staphylococci. The gelatin plate, made with half this quantity of vaccine, contained only two colonies, both of them staphylococci; one mould, evidently an accidental contamination, made its appearance at the extreme margin of the plate. In the glucose formate agar tube small aerobic colonies were found, one growing on the surface; there was also a large-lobed, somewhat cloudy growth in the depths—an anaerobic organism. The sample heated to 60° C. for one hour gave no growth of any kind.

TABLE XIII.—*Experiments with Lymph from the Local Government Board Laboratories.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Three days	24	2 1 mould.	10	0

All the above vaccines have been examined on a former occasion and the results now obtained may be compared with the results recorded in THE LANCET of April 28th, 1900, p. 1227. Since this investigation was commenced we have had placed at our disposal three other samples of lymph of which a similar bacteriological examination has been made with the following results.

(14)

GLYCERINATED CALF LYMPH FROM MESSRS. BURGOYNE, BURBIDGES, AND CO.,

16, COLEMAN-STREET, LONDON, E.C.

This lymph, of which we were supplied with six small tubes at 2*s.* 6*d.*, was numbered 1359½ and was dated "14/1/02," with the note: "In the event of any complaint kindly refer to above number when writing." The lymph was slightly opaque and was very well mixed and homogeneous. The plates were made eight days after the lymph was dated;

the number of colonies was low. In the agar plate 49 colonies appeared; most of them consisted of staphylococci, some white, some with a slight yellow tinge; in all of these the margin was clean cut and the colony was moist and opaque-looking. In addition to these were greyish-yellow colonies somewhat similar in appearance to the above; they were, however, composed of short, curved, plump rods with rounded ends; these rods appeared to be rapidly dividing into still shorter oval bacteria. There were also some small club-shaped organisms which appeared to be involution forms, and in some of these the protoplasm was aggregated into small irregular masses, in which, however, there were no traces of spores. On the gelatin plate 10 colonies made their appearance; here, again, most of the colonies were staphylococci, some yellow, some white, but one very opaque colony was made up of yeast cells and a second which looked almost like a drop of paint consisted of thick rods. In the glucose formate agar culture were numerous very minute colonies which as they grew caused clearing up and "brightening" of the surrounding agar; they consisted of short plump rods with curved ends. It was difficult to count these colonies very accurately but they numbered from 400 to 500. In an agar plate made with vaccine that had been heated to 60° C. for one hour only three colonies made their appearance and these consisted of small rods in which spores ultimately developed.

TABLE XIV.—*Experiments with Glycerinated Calf Lymph from Messrs. Burgoyne, Burbidges, and Co.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Eight days	49	10	400–500	3

(15)

MERCK'S PURE GLYCERINATED CALF VACCINE LYMPH.

PREPARED IN THE BACTERIOLOGICAL DEPARTMENT OF MERCK'S LABORATORIES, DARMSTADT.

LONDON OFFICE: 16, JEWRY, E.C.

Merck's lymph is prepared under strict aseptic precautions after the method used in the German Government Laboratories, and is not supplied unless it satisfies the following three conditions: 1. After slaughtering, the internal organs of the animal are examined by an official veterinary surgeon, it being imperative that these organs should be in a perfectly healthy condition. 2. The lymph is subjected to bacteriological examination (on glycerine agar plates), which is required to establish the absence of pathogenic bacteria. 3. The efficiency of the lymph is ascertained by test vaccination.

The following retail prices have been fixed for the tubes:—Small tubes for one or two inoculations, yellow wrapper, two for 1*s.*; six for 2*s.* 6*d.* Medium tubes for five inoculations, red wrapper, 1*s.* each; three for 2*s.* 6*d.* Large tubes for 10 inoculations, green wrapper, 2*s.* each, three for 5*s.* Tubes *should be kept in a cool place* and must be used up immediately after they have been opened.

Six tubes, No. 404, dated 8/2/02 (to be used before 22/2/02), for five inoculations. On examining these tubes they were found to be clear or slightly opalescent, with opaque areas. On pouring out this lymph into warm agar it was found to be finely granular. Cultivations were made on Feb. 11th, three days after the vaccine was dated. In the agar plate not a

TABLE XV.—*Experiments with Lymph from Merck's Pure Glycerinated Calf Vaccine Lymph.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
First sample.				
Three days	0	2 (one liquefying).	0	0
Second sample.				
Fourteen days ...	1	0	—	—

single organism made its appearance. In the gelatin plate two colonies had appeared at the end of nine days, one a yellow staphylococcus, the other a liquefying colony. In the glucose formate agar tube and in the specimen heated to 60° C. for one hour not a single colony developed during the period (over a month) that the specimens were kept under observation. This result was so good that it was thought advisable to test another sample. For this purpose a special sample that had been forwarded to THE LANCET Offices for examination—No. 415, dated 20/2/02 (to be used before 6/3/02)—was used for bacteriological investigation. Here again the results were excellent, only a single colony appearing in the agar plate, none on the gelatin plate.

(16)

ISTITUTO VACCINOGENO,

22, VIA ALTAGUARDIA, MILAN.

DIRECTOR: DR. GIUSEPPE SIGNORILE.

Passages quoted from letters from Dr. Signorile desired the Secretary of the Italian Chamber of Commerce in London to call our "attention to the pure vaccine lymph which the Government institute under his administration already supplies to Switzerland and other countries. The lymph is sent in a new improved glass tube, having both extremities perfectly closed with molten glass, each tube being provided with a lancet, one side of which serves to file off when wanted for use the soldered point of the tube. The testimonials of many Italian and foreign municipal bodies and medical men have fully established the fact that the lymph, preserved by means of the new process adopted by the Milanese Institute, is absolutely pure and free from all pathogenic germs whatsoever." This sample was received on March 11th, 1902, but the box containing the vaccine was stamped "27/11/01." Plates were poured on March 15th with the following results. In the agar plates numerous colonies—at least 1500—were developed. This, however, is a low estimate rather than a count, as the organisms were so numerous that the colonies growing from them ran into one another. The anaerobic organisms were principally, if not entirely, staphylococcus albus. On the gelatin plate 280 colonies developed, 52 of these liquefying the gelatin. The opaque yellowish colonies that do not liquefy the gelatin are made up of groups of flagellated rods with rounded ends; the liquefying colonies resemble bacillus subtilis very closely. In the glucose formate agar shake tube a large number of colonies developed anaerobically and much gas with a very evil smell was formed. The contents of a tube placed in agar and heated to 60° C. for one hour contained 172 organisms that had resisted this temperature, so that not only was the number of ordinary organisms very high—from which, owing to the length of time which had elapsed since the material was prepared, we must gather that the glycerination (?) has been very imperfectly carried out—but the number of spore-bearing organisms is very much higher than is met with in most of the other samples that came under our observation. These spore-bearing organisms are mostly thin rods, but in some of the opaque colonies with crenated margins a peculiar "sulphur" fluorescent organism, made up of skittle-shaped rods and rods with rounded ends, is present. This lymph was not used as a vaccine on the human subject.

TABLE XVI.—*Experiments with Lymph from the "Istituto Vaccinogeno" of Milan.*

Period of examination after the sample was sent out.	Number of colonies.			
	Agar plate.	Gelatin plate.	Glucose formate agar tube.	Agar tube heated to 60° C. for one hour.
Eleven weeks	1500 +	280 (52 liquefying).	Large number with enormous quantity of gas.	172

FORMATION OF VESICLES.

Although doubt has been thrown on the possibility of determining whether a vaccine lymph is sufficiently potent or not by any experiments except those on the calf, the monkey, or the human subject, it has now for some time been recognised that under certain conditions experiments on rabbits may afford evidence on this point, and experiments with many of these lymphs were carried out to determine whether

they all acted equally powerfully on rabbits; for, as pointed out by Calmette, if the lymph is active for rabbits it is probably still more active in the case of the human subject. There can, we think, be little doubt that here we have a valuable method at our disposal; for, comparing the results obtained with the human subject, it was found that in every case the comparative results were the same, but in most cases the vaccine effects produced in the latter were very much more marked than were those produced in the former. In Table XVII. the activity of the vaccine is indicated by the number of asterisks inserted opposite to the different lymphs. In a few cases in which very marked reactions were obtained in the human subject the results in rabbits were not so marked, but in almost every case where this happened there was evidence of mixed infection, the vaccinal result being far from typical. Bearing this in mind the relative activity of any sample of lymph may be indicated by taking the sums of the numbers of asterisks in the two columns under "rabbit" and "human." High bacteriological purity associated with great vaccinal activity must be taken as the essential features of a good vaccine lymph, and bearing these features in mind it is unnecessary to lay down any hard-and-fast line as to which is the best and most trustworthy lymph in the series. Each vaccinator should, in the first instance, select those lymphs that seem to conform to these requirements and promise the best results and then, amongst these, having found one with which he is satisfied, keep to it.

In drawing up Table XVII. the total number of organisms has not always been taken as the exact measure of the bacteriological purity of a sample of vaccine lymph. The anerobic organisms growing on agar at the temperature of the body have been looked upon as giving the most trustworthy indication as to the successful glycerination of the lymph. Next in importance appear to come those organisms growing on gelatin, and then come the spore-bearing organisms. The anaerobic organisms—unless actually pathogenic or in very large numbers—appear to be of comparatively little importance except in those cases where gas, especially foul-smelling gas, was formed; and the reason that one of the lymphs has been placed in a very low position is that very large quantities of such foul-smelling gas were developed in the medium when the cultivation was maintained at the temperature of the body. It is scarcely necessary to insist more strongly upon this point.

The weight of the vaccine used was obtained as follows. The glass tube or phial with its contents was first carefully weighed, then immediately after withdrawing the lymph the glass with the small quantity of vaccine remaining was again weighed. Before driving out the vaccine the tubes were carefully washed with an antiseptic solution and were allowed to dry in a sterile box. One of the sealed ends was then snipped off with sterile scissors and the closed end was gently warmed near a small gas flame in order to cause expansion of the air within the tube. The lymph driven out by the expanded air was received directly into sterile broth, agar, or gelatin, as the case might be, and never came in contact with anything but the cut end of the vaccine tube until it reached the inside of the sterile test tube. It has, of course, been pointed out that these vaccines vary considerably as to the degree of dilution and that the number of bacteria contained is not altogether a measure of the purity of the lymph before glycerination. It must be insisted, however, that whatever be the dilution of the lymph the number of organisms applied to the abraded surface is that contained in the definite volume of lymph used for vaccination and that if a lymph is sufficiently active to produce well-marked vesicles and distinct constitutional effects and at the same time contains a small number of extraneous organisms, such lymph is the best for the purpose for which it is designed to be used, and the best stage of glycerination and degree of dilution are those where the number of extraneous organisms is small, the number of vaccine organisms still being sufficiently large to bring about the desired results. It is for this reason that in coming to a decision as to the quality of a lymph not only the number of organisms present should always be taken into consideration but also the actual activity of the vaccine.

In compiling these figures access has been obtained to records of over 400 vaccinations. It is interesting to note that there is scarcely a doubt that all the vaccine lymphs at present on the market are, as regards their capability of producing vaccine vesicles, of very trustworthy character at some period or other after their preparation. It will be noted, however, that the series examined affords examples of three sets of conditions. (1) Those in which the glycerination is well carried out and the number of organisms present is small but the vaccine virus still remains sufficiently potent to induce typical vaccine vesicles without giving rise to a too violent reaction. If, when using such lymphs, proper precautions are taken to sterilise the skin and to prevent the access of extraneous germs to the abraded surface, the vaccine reactions, both local and general, run a typical course and the patient is very little inconvenienced except for a period of two or three days when the vaccine fever is at its height. This forms a kind of intermediate series, for we find that (2) there are certain lymphs in which

TABLE XVII.—VACCINE LYMPH. RELATIVE BACTERIAL PURITY AND VESICLE-FORMING ACTIVITY OF SPECIMENS RECEIVED DURING JANUARY AND FEBRUARY, 1902.

Source of lymph.	Weight of material in grammes.	Number of colonies per 0·05 gramme.				Vesicle formation in rabbits.	Vesicle formation in the human subject: notes collected from various sources.
		Agar plate.	Gelatin plate.	Anaerobic tube.	Spores.		
1. Merck	0·048	0	2	0	0	**	**** (three samples), ** (two samples), * (two samples), 0 (three samples).
2. Local Government Board ...	0·037	12	2	14	0	****	****
3. Birmingham	0·050	26	0 (? moulds).	50	0	****	****
4. Maw, Son, and Sons	0·046	33	3 (1 liquefying).	100	*227	****	No statistics.
5. Institut de Vaccine Animale	0·048	40	0	*Some thousands.	0	*	****
6. Ferris and Co.	0·038	61	1	* ,, ,,	0	**	****
7. Hime	0·041	72	146 (10 liq'g.).	135	6	**	****
8. Faulkner	0·117	87	145 (1 liq'g.).	280	3	*	****
9. Burgoyne, Burbidges and Co.	0·026	94	19	850	6	**	No statistics.
10. Warlomont (Markt Bros.) ...	0·033	170	42 (2 liq'g.).	85	0	**	****
11. Rebman	0·043	600	278	Some thousands.	3	**	****
12. Jenner Institute, Battersea	0·064	600	515 (1 liq'g.).	Innumerable.	0	****	No statistics.
13. Renner	0·048	2,075	1,500	Tens of thousands.	1	****	****
14. Chaumier	0·081	10,000	34	Innumerable.	2	****	****
15. Association for the Supply of Pure Lymph (Darke)... ...	0·069	Uncountable.	110	Some thousands.	25	****	****
16. Istituto Vaccinogeno, Milan	0·050	1,500 +	280 (52 liq'g.).	Innumerable; gas.	172	No experiments.	No statistics.

* In No. 4 the spore-bearing organisms are comparatively numerous and in Nos. 5 and 6 the anaerobic organisms are out of all proportion to the numbers of other organisms present.

are numerous extraneous organisms. It appears from examination of these organisms that certain manufacturers are careful to avoid glycerinating the lymph to such a degree that all organisms are got rid of; indeed, some of them claim that the presence of certain cocci is of distinct advantage in so far as such organisms assist in the production of the local lesions. There can be no doubt that in vaccines prepared on this plan most active local lesions are obtained, but, especially in stout people, the accompanying œdema is often very marked and the patient may suffer considerably from constitutional disturbance—fever, malaise, &c. This is notably the case when the vaccine virus itself, apart from outside organisms, is potent. Chaumier's, Rebman's, and several of the other lymphs in which the number of organisms is comparatively high (see Table XVII.) may be taken as types of this lymph. (3) At the other extreme are certain lymphs in which the *glycerination and dilution* appear to have been carried to such a point that there is only a slight margin between what may be called first-class vaccine lymph and lymph that though perfectly pure is not absolutely trustworthy. As a type of this class Merck's is, perhaps, the best. It is practically free from all extraneous organisms and certain batches gave by far the best results as regards vaccination that were obtained. In the cases on which these observations were made the typical pearly vesiculation, the depressed centre of the vesicle, and the narrow areola were all exceedingly well marked. The fever was typical though coming on at a comparatively late period. Other samples of this same lymph gave exactly the same typical vesicles when the lymph did "take," but the number of successful insertions was comparatively small, whilst in the case of a third series of samples with which inoculations were made within a couple of days after they were received from the agents in London not a single successful insertion was obtained in six cases (18 points), though in other patients inoculated on the same day and in exactly the same fashion with some of the lymphs less highly glycerinated every insertion was successful.

On a careful comparison of these various lymphs with those examined on former occasions we are of opinion that there has been: (1) a very marked improvement in the quality of the vaccine lymphs supplied during the last few years; (2) that glycerination of lymph, if precautions be taken to secure a lymph "clean" in the first instance, may be carried out without interfering in any very great degree with the activity of the vaccine virus; (3) that the presence of a large number of organisms in an active vaccine lymph renders the local lesion more severe and modifies, alters, or renders more severe the constitutional symptoms, causing both local and constitutional symptoms to make their appearance at an earlier period than when well glycerinated vaccine is used; (4) that the œdema, though fairly severe in certain cases where well glycerinated calf lymph is used, is far more severe and much more obstinate in those cases in which imperfect glycerination allows of the persistence of a large number of extraneous organisms; and (5) that although prolonged glycerination, especially when the vaccine is very dilute, appears to render the lymph less trustworthy, the vesicles when produced by this lymph are so typical and the course of the process is so definite that it is worth running the risk of having to vaccinate a second time in order to obtain such satisfactory results. Where any doubt at all remains in the mind of the practitioner we would recommend that over-glycerinated rather than under-glycerinated lymph should be obtained. A careful study of Table XVIII. will enable those interested to determine for themselves which of the lymphs are probably most suitable for their purposes.

CAUSES OF "BAD" VACCINATION.

We are strongly of opinion that many of the bad results obtained in vaccination are due to the presence of one or other of the following conditions: imperfect sterilisation of the skin and want of protection against the invasion of the weakened and abraded tissues by extraneous organisms. We have found that, given a good lymph, the application of a plentiful supply of soap and water, a razor to take off hairs and surface epithelium, ether to remove fatty and sebaceous matter, alcohol to wash away the ether, superficial vaccination, and protection of the vaccinated surface throughout the whole course of the local manifestation of vaccinia, most excellent results may be obtained. The best means of protecting the local lesion is the application of several folds of sterile lint containing no chemical disinfectant; this is held in position by strips of adhesive plaster; a layer of boric lint may then be placed outside this dressing and the whole may be changed as soon as the slightest evidence of moistening by serum appears in the boric lint. One of the most certain methods of producing severe œdema is for the patient to use his arm freely and to bring about perspiration just before and after the vesicles have begun to form. Rest, free action of the bowels, and the above precautions are the best preventives not only of vaccinal œdema but also of secondary sloughings. We are more firmly convinced than ever—to quote from our previous report—that the "freer the lymph is from extraneous pyogenic and other organisms the less marked will be those inflammatory concomitants which are so familiar to all vaccinators," and that "much of the irritation that has often been regarded as essential" to a successful vaccination "is not so much due to the action of the vaccinal organism itself as to organisms acting as irritants upon the cutaneous tissues." We are informed that the best results are invariably obtained with those lymphs which produce late vesiculation, and "that if a lymph be free from bacteria, especially streptococci and staphylococci, and if typical vesicles, slow of development, with little inflammatory areolæ and late in coming to maturity, be obtained" the patient is properly vaccinated. In the first report we had not obtained sufficient information on these points to be able to give a definite opinion, but with the information now placed at our disposal we have no hesitation in speaking most definitely on this point.

EXPERIMENTS WITH OLD LYMPHS.

Lymphs which had been kept since the beginning of the year 1900 were plated out on agar in order to see how far they differed bacteriologically from the same lymphs examined at that time.

TABLE XVIII.—*Giving Results of Plating Out Lymphs that had been Kept (Cool and in the Dark) for a Couple of Years.*

Lymph.	Plated out.	Number of colonies on agar.
Local Government Board, 5/2/00, Series 370	27/2/02	Only six tiny colonies.
Establishment for Vaccination with Calf Lymph, 20/3/00	,,	Seven colonies.
Ferris and Co., 1900	,,	
Rebman, 20/3/00...	,,	One colony.
Institut de Vaccine Animale, calf 78, 14/3/00 ...	,,	One colony.
Maw, Son, and Sons, 1900	,,	About 120, mostly spore bearers.
Dr. Hime's Calf Vaccine Institution, 20/3/00 ...	,,	154; amongst these is the yellowish-green colony found in the 1902 samples.

Further, in order to determine whether vaccines, which in the fresh condition undoubtedly give results on rabbits, remain potent for any length of time three rabbits were inoculated with old lymphs—the first three of the above (Local Government Board, Renner's and Ferris's). In every case the results were absolutely negative.

THE EDUCATION OF THE DEAF AND DUMB.—On May 30th Earl Egerton of Tatton presided at the Westminster Palace Hotel over a conference composed of the representatives of the governing bodies of schools for the deaf and dumb. The chairman stated that the report of the Royal Commission on the success of the oral system, especially in Germany and Italy, had led to a large increase of the teaching of that system, while the standard of the teachers had been raised. The conference passed resolutions to the effect that institutions for the deaf should be exempt from rates and taxes; that the obligatory condition in the Blind and Deaf Act, 1893, of raising one-third of the expense of maintenance from private sources should be removed; that an increased grant ought to be allowed; and that the reduction of the grant when a child was absent from the schoolroom through illness, although remaining in the institution, should not take place.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THURSDAY, MAY 29TH.

THE sittings of the summer session of the General Council of Medical Education and Registration were resumed to-day in the Council's hall at 299, Oxford-street, W., Sir WILLIAM TURNER, the President, being in the chair.

The Case of Dr. Tyndale Watson.

The Council considered the case of Dr. William Tyndale Watson of Tottenham, Middlesex, N., registered as Mem. R. Coll. Surg. Eng. 1861, M.D. Univ. Dubl. 1867, but stated to possess the further unregistered qualifications of M.D. Oxon., Dip. State Med. Dubl., who had been summoned to appear before the Council on conviction for misdemeanour, he having in November last pleaded guilty to a charge of indecent assault brought against him in the Central Criminal Court and been sentenced therefor to a month's imprisonment.

Dr. WATSON appeared and stated that Mr. A. A. Strong, solicitor, would represent him before the Council.

Mr. WINTERBOTHAM (solicitor to the Council) explained the charge and Mr. STRONG proceeded with the evidence in mitigation of punishment.

Mr. JOSEPH HOWARD, M.P. for the Tottenham Division of Middlesex, was first called and in answer to Mr. STRONG said that he had known Dr. Watson for rather more than 40 years. He had always held a very high opinion of him. Witness had met him occasionally and the doctor had frequently been at his house as a friend. He had attended witness professionally but none of his family. Witness had always found Dr. Watson to be of irreproacbable character.

Dr. GILBART SMITH testified that he knew Dr. Watson well. He had known him very intimately for more than 30 years and had found him most highly honourable and absolutely opposed to such a thing as he had confessed to have done. Witness had the highest respect for him. About 10 years ago he had attended him when he was suffering from the effects of influenza. He saw him with another medical man. They thought to recommend Dr. Watson to take a sea voyage but they had not made a recommendation in that direction because of the state of the doctor's mind, which might have made his presence on board ship dangerous. There had been signs of insanity in his family, a brother having had to be put under control.

In answer to Sir CHRISTOPHER NIXON witness said that he and the other medical man were afraid to permit Dr. Watson to take a sea voyage because they thought he might commit suicide.

Dr. G. VIVIAN POORE stated that he had known Dr. Watson for about 20 years and had always the highest opinion of his character. He certainly never thought him capable of such an action as in court he pleaded guilty to.

The Rev. CHARLES HOWELL, vicar of Trinity Church, Tottenham, said that he had known Dr. Watson for about 30 years and from the first had had a high opinion of his personal character. He had constantly met him and he should say that the general opinion of the people of Tottenham was what his own was.

Mr. E. WOOD, Enfield, a registered medical practitioner, who stated that he had known Dr. Watson for about 27 years, said that he had always had the highest opinion of him. He was surprised that Dr. Watson had been charged with anything of the sort he had admitted. Witness had a letter from the North Tottenham Medical Society testifying to the high esteem in which he was held among the practitioners of Tottenham.

Mr. DOUGLAS WATSON, M.R.C.S. Eng., L.R.C.P. Lond., in practice in Essex, and a son of Dr. Watson, informed the Council that during the illness which occurred 10 years ago his brother and himself had had a great deal of trouble in looking after their father. On several occasions they had to see that he was not permitted to take chloroform or any opiate. After his brother's death three years ago his father broke down again and witness had the same trouble and anxiety as previously he had had.

Mr. STRONG, in answer to a question as to whether Dr. Watson would go into the witness-box, said that the doctor was in a bad condition of health, but he was ready to present himself if the Council wished to ask him any questions. He explained that Dr. Watson had been in prison for a month, the Recorder having postponed sentence from the one session at which he pleaded guilty to the following session, and on being brought up again the sentence imposed released him from custody on the day on which it was given.

Dr. GILBART SMITH volunteered the statement that while Dr. Watson was in prison he saw him on two or three occasions. He was in hospital then and he thought that the certificate of the prison doctor had had something to do in influencing the Recorder's judgment in the case.

Mr. STRONG, in addressing the Council, made an appeal for merciful consideration of the doctor's case. Dr. Watson, he said, was born in Ireland 63 years ago. He had been in Tottenham since shortly after obtaining his degree of Doctor of Medicine in 1867 and he had acted as medical officer of health of Tottenham and officer at the Tottenham Dispensary. Subsequently he had received from Dublin an honorary Diploma in Public Health. When he resumed work after his trouble of 10 years ago his practice increased and he took his eldest son into partnership with him. That son died three years ago and Dr. Watson, in addition to the mental anxiety caused by his death, had to bear the anxiety of finding under the copartnery contract a large sum of money for his son's young widow. He, moreover, had the practice thrown on his own hands and unfortunately he had tried to get strength to carry it on efficiently by taking such drugs as morphia; he suffered from constipation, nervous depression, piles, and enlargement of the prostate gland; they must all feel that there must have been some strong mental or physical reason which had caused him to slip from the path of virtue. Dr. Watson, however, had never attempted to deny his fault. He admitted that he had sinned but would not add to it by telling a lie. He had undergone imprisonment but that was absolutely nothing to the punishment he had suffered in other ways. On his release he found his practice practically gone and had to part with it for a mere song; he found his friends deserting him, his money was exhausted, and he at once left off practice and went to Swanage where he hoped to remain for the rest of his days, having ceased to have all practical connexion with that profession which he loved so much. If the Council struck him off the Register he would feel that to be the greatest blow of all. If there was a case in which mercy should be shown it was this, and for the sake of the doctor's wife, to whom he had been married for 35 years, and for his sons and daughters, and because of the many years during which he had gone quietly on his way without committing fault, he, Mr. Strong, entreated them to show Dr. Watson mercy.

The Council deliberated on the case *in camerd*. On the readmission of strangers, the PRESIDENT, addressing Dr. Watson, said: The Council has carefully deliberated on your case and this is what I am instructed to say, "That having heard evidence bearing on the state of your mental and physical health the Council does not see fit to remove your name from the Medical Register."

The Case of Dr. Robert Rendall.

Consideration was next given to the case against Robert Rendall, of 19, St. Peter's-road, Great Yarmouth, registered as M.B., Mast. Surg. 1893, Univ. Edin. Dr. Rendall appeared for himself and Dr. A. G. Bateman as representing the Medical Defence Union.

Mr. WINTERBOTHAM explained the position in which this case stood. He said that the charge against Dr. Rendall was brought before the Council last November and was this—

> That you have been guilty of infamous conduct in a professional respect, particulars of which are that you have accepted and continue to hold the appointment of medical officer to the Liverpool Victoria Legal Friendly Society at Great Yarmouth, a society which systematically practises canvassing for the purpose of procuring patients, and that you have approved or acquiesced in such canvassing.

Having deliberated on the case the Council came to the conclusion "that the facts alleged against you in the notice of inquiry have been proved to the satisfaction of the Council. The Council feel it their duty to express their sense of the gravity of the facts which have been proved against you; but in order to give you an opportunity seriously to reconsider your position in relation to the Liverpool Victoria Legal Friendly Society and the National Medical Aid Company, Limited, they have adjourned the further consideration of

the charge until the next session, when you will have to appear and satisfy the Council as to your conduct in the interval."

Due notice to attend had been served on Dr. Rendall and the following letter was received from him on May 13th :—

19, St. Peter's-road, Great Yarmouth, May 13th, 1902.

DEAR SIR,—I beg to lay before the General Medical Council the following statement—viz.: that I sent in my resignation as medical officer to the National Medical Aid Co. and as medical referee to the Liverpool Victoria Legal Friendly Society on Dec. 24th, 1901, and my connexion with them has been entirely and completely severed since Lady Day, March 25th last.

I inclose the acknowledgment of my resignation sent me on Jan. 3rd, 1902, by the secretary of the National Medical Aid Co.

Under these circumstances will you kindly let me know if it is necessary for me to attend on the 29th inst.?

Yours obediently,
R. RENDALL.

W. H. Winterbotham, Esq.,
Solicitor to the General Medical Council.

[INCLOSURE.]

The National Medical Aid Co., Ltd.,
Registered Offices, 80 & 80A, Fleet-street,
London, E.C., January 3, 1902.

DEAR SIR,—I beg to acknowledge receipt of your letter of the 24th ult., which was read to the directors at their last meeting, and I beg to inform you that your resignation as medical officer of the company at Great Yarmouth contained therein has been accepted and will come into effect on March 24th next.

By order of the Board,
E. T. HARWOOD, Secretary.

Dr. R. RENDALL, 19, St. Peter's-road, Great Yarmouth.

He (Mr. WINTERBOTHAM) had informed Dr. Rendall that it was necessary he should attend the meeting of the Council and he was present.

The PRESIDENT, addressing Dr. Rendall: Have you any further evidence to offer?

Dr. RENDALL: No, sir.

The PRESIDENT: Do you wish to address the Council on the matter?

Dr. RENDALL: No, sir, I have nothing further to say; just to affirm the fact that I resigned the appointment I held in the Medical Aid Company and I have no intention of having in the future any connexion with it.

Dr. BATEMAN informed the Council that he had nothing to say.

The Council then sat in private for some minutes. On resuming in public the PRESIDENT, addressing Dr. Rendall, said: I am instructed to communicate to you the decision at which the Council has arrived—namely: "That having considered the facts and evidence submitted by you in relation to your action since the last session the Council has resolved to proceed no further in regard to the charge proved against you."

An Application for Registration.

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, it was agreed to adopt a recommendation of the English Branch Councils that they should consent to the registration of Mr. Abiathar Wall, Lic. Soc. Apoth. Lond., 1871, Lic. R. Coll. Phys. Edin., 1872, Mem. R. Coll. Surg. Eng., 1872, a medical practitioner entitled to be registered under the Medical Act (1858), but who neglected to effect such registration until after the "appointed day" (June 30th, 1887), under the Medical Act (1886).

The Case of Dr. William Park.

The next business on the order paper was consideration of the case of William Park, registered as of Gartlea House, Airdrie, M.B., Mast. Surg., 1897, Univ. Glasg., who had been summoned to appear before the Council on a charge of unprofessional conduct. Application was made to have the hearing postponed till November on the ground that Dr. Park was abroad, that the ship in which he had taken up the position of "ship's doctor" would not return to this country before July next, and that he wished to be heard in his own defence; but on the advice of Mr. MUIR MACKENZIE (the Council's legal adviser) it was resolved to proceed and for upwards of an hour the hearing of, and deliberation on, the case went on *in camerâ*. On the readmission of the public

The PRESIDENT said: The Council have deliberated on this case and their judgment is "that William Park has been guilty of infamous conduct in a professional respect and they do direct the Registrar to erase his name from the Medical Register."

The Council adjourned.

FRIDAY, MAY 30th.

The Council resumed work to-day, Sir WILLIAM TURNER presiding.

Appointment of Committees.

The Pharmacopœia, Finance, Dental, and Students' Registration Committees were reappointed without change. In the Examination Committee Dr. Windle was appointed in place of Dr. Glover and Dr. Finlay in place of Dr. Pettigrew. In the Education Committee Dr. Reid's place was given to Dr. Mackay, while in the Public Health Committee the place resigned by Dr. Pye-Smith was given to Mr. Jackson. In the case of the Dental Education and Examination Committee Dr. Finlay was appointed in place of Dr. Reid, and Dr. Bennett was made an additional Irish representative.

The Finances of the Council: Scheme of Reform.

The next business was the consideration of the report of the Financial Relations Committee appointed in June, 1901, "to consider what amendments, if any, to the Medical Acts are necessary in order that the relations between the Council and the Branch Councils may be readjusted and how the financial position of the Council may be placed on a satisfactory basis." In their report the committee said that the following points had become clear :—

(*a*) That the financial position of the Council and its branches is unsatisfactory and calls for consideration and decided action on the part of the Council.

(*b*) That the deficit, on the Council's income and expenditure account, on the average of the last seven years' amounts to full £1200 per annum.

(*c*) That this state of the Council's affairs is due to the special constitution, the small income, and the work of the Council and Branch Councils, as determined by the Medical Acts, 1858-1886, and it cannot be met by such economics as are proposed in the reports of the Finance and Special Finance Committees referred to in the narrative.

(*d*) That to readjust permanently the relations between the Council and the Branch Councils it will be necessary to obtain certain amendments of the Medical Acts, 1858-1886.

It will render the situation of the Council plainer to first submit the general conclusion arrived at by Mr. Tomes from an examination of the original state of the finance of the General Council and the effect thereupon of the 42 years which have elapsed since the initiatory payments of registration fees began in 1858.

During the first few years after the institution of the Register large sums were received in the form of £2 registration fees paid by those entitled to admission to the Register, and these payments, in diminishing amounts continued over a good many subsequent years. An investigation of the accounts shows that there was received from such £2 registration fees £35,000 in round numbers.

The interest actually received upon such part of this sum as was not devoted to current expenditure but was invested has, during the whole period since the Council was instituted, amounted to £40,485 in round numbers, so that the initial receipts and the interest received amount together to £75,485. In addition a sum of about £3600 has been derived from profit upon the issues of the Pharmacopœia.

But the present assets do not materially exceed £41,500, so that the whole of the Pharmacopœia profits, the current registration fees, and, in addition, some £34,000 derived from interest, have been expended.

From this it follows that throughout the whole period of the Council's work the current £5 registration fees have failed to meet the expenditure by something like £900 a year, although it is possible that there may be individual years or even periods when the above-mentioned fees were adequate, if the receipts were large and the expenditure happened to be small.

This aspect of the matter, the insufficiency of the £5 registration fees to pay their way unaided, even over the whole period which embraces many favourable years, is of vital importance to a full recognition of the fact that the present deficiency of resources is inherent in the limitations contained in the Medical Act, 1858.

It ought in this connexion to be remembered that the Act in question was, by reason of the circumstances surrounding its inception, tentative, and it is not surprising, therefore, to find that after an experience of over 40 years some of its provisions have proved to be inadequate.

It will now be readily understood that the Council is at present dependent on the surplussage of fees remaining as accumulations of the income of the English and Scottish Branch Councils and that these assets are rapidly diminishing, since the work of the Council causes at the present time an annual deficit of over £1200. The Irish asset of this kind has already been exhausted.

The assets of the General Council consist in brief of the Pharmacopœia, of the difference between the actual value of the freehold premises and the amount for which they are mortgaged to the English branch, and of the present value of the sinking fund. The assets of the English branch consist of the mortgage on the present premises of the Council which stood in the last balance-sheet at £25,764 and of an investment—i.e., £9149 in Consols (taken at 90). The assets of the Scottish branch consist of £4770 in Consols (taken at 90). There is thus, taking the investments together, a sum of about £13,919 in the form of liquid assets available at any moment.

In addition to such available assets the Council possesses house property (i.e., No. 299, Oxford-street, and No. 16, Hanover-square) which represents in actual cost £25,764, and which probably stands for a considerably larger sum if the asset be realised.

The foregoing represents the whole resources of the Council. As regards its financial stability, it is clear that in the year 1901 the deficit was £1509; at this rate, and that of the annual deficit shown in Mr. Frere's report for the preceding three years, all the liquid assets will be exhausted in eight or nine years and it will then become necessary to commence to realise the value of the premises.

Since, therefore, the efficient work of the Council will cease from lack of resources within the forthcoming decade a complete scheme of financial reform must be adopted at the earliest possible date and from what has been already said it is obvious that such a scheme requires fresh legislation for its execution.

SCHEME OF READJUSTMENT OF THE FINANCIAL RELATIONS OF THE COUNCIL AND BRANCH COUNCILS AND OF REFORM OF THE FINANCES OF THE COUNCIL.

Any scheme of financial reform must fulfil the following conditions:—

1. Provision of sufficient revenue for the execution of the duties of the Council.
2. Provision of a central administration for the income and expenditure of the Council and Branch Councils.

The details of such a scheme consequently may be most conveniently considered under the heading of (1) Revenue, (2) Administration.

(1) REVENUE.

The revenue of the General Council is at present provided under Sections XIII. and XV. of the Medical Act, 1858, which enact that the bulk of the income—viz., fees paid for registration—is to be paid to the branch councils, and that the Council is to obtain its chief supplies by requiring contributions from the Branch Councils by a percentage-rate on all moneys received—i.e., in effect at a rate proportionate to the registrations effected at each Council's office.

The income of the Branch Councils is derived from only two sources—viz., the fees for registration and the interest on the accumulation, if any, of income—i.e., original registration fees—before referred to.

The latter amounts in the case of the English Branch Council to about one-third, of the Scottish Branch Council to about one-twentieth of the first-named source. The Irish Branch Council now has only the registration fees as its source of income which has to be supplemented by an annual grant from the funds of the General Council.

Hence the reliable revenue is the amount of the annual registration fees, plus the rent of the Hanover-square property—viz., £250 per annum, less income tax. The amount of the annual registration fees varies, and in the year 1901 only amounted to £7060, whereas the restricted expenditure of the Council for the same year amounted to £10,065.

The essential source of the Council's revenue being thus inadequate it is essential that a revision of the system of registration fees be instituted, as it is needless to take into consideration the only remaining alternative of assistance from the Imperial Treasury.

The system of registration fees at the present time includes an initial registration fee of £5 and small fees for subsequent additional registrations, but there is no fee charged for the entries on the Students' Register.

There are three courses of revision possible if a larger revenue is to be secured: to raise the initial registration fee for practitioners, to substitute a small annual registration fee for an initial payment, or to institute a student's registration fee.

Objections can be readily raised against each of these propositions, but at this point only one primary consideration can be discussed—namely, how far would the instituting a registration fee for students or the raising of the initial registration fee for practitioners or the payment of an annual registration fee reasonably satisfy the requirement of an adequate revenue.

Undoubtedly an annual fee from each registered medical practitioner would provide a large revenue, but the committee are of opinion that the provision of an addition to the annual revenue can at present be best created by adopting the institution of a students' registration fee and by raising the fee for the initial registration of practitioners. The committee estimate that if the latter fee be raised from £5 to £7 and if a fee of £1 be charged for a student's registration, the resultant addition to the Council's revenue per annum will amount to somewhat over £4000. Such an increase of the resources of the Council would at least save it from the bankruptcy with which in a few years' time it will be threatened if action is not soon taken to place the accounts on a stable basis.

(2) ADMINISTRATION.

The present system of administration of the funds of the Council and Branch Councils is very cumbersome and unbusinesslike.

It has, in fact, led to the embarrassment and insolvency of the Irish Branch Council.

To effect the necessary reforms in this particular all that is needful is to reverse the present system and to provide that all moneys paid into the offices of the Branch Councils shall be forwarded forthwith to the General Council and that all accumulations of income by the Branch Councils shall be transferred to the account of the General Council.

It would further be necessary to provide that all needful expenditure, either on behalf of the General Council or the Branch Councils, should be defrayed by the General Council.

Such financial reforms would in no wise interfere with the registration rights of the Branch Councils.

To carry out a scheme of this nature amendment of the Medical Acts would be necessary.

The report then set out in detail the requisite alterations in the Medical Acts. The recommendations of the committee were as follows:—

1. That the principles of amendment of the financial position of the Council embodied in the report of the Financial Relations Committee be approved.
2. That the Financial Relations Committee be reappointed, with instructions to draft, with the assistance of the legal advisers of the Council, a Medical Acts Amendment Bill, carrying out the principles of financial reform approved by the Council.
3. That such draft Bill be considered at the next session of the Council.

NOTE BY MR. HORSLEY.

The foregoing report is the report of the committee as a whole.

I desire to record my belief that a complete solution of the financial difficulties of the Council is only to be secured by the institution of an annual registration fee and by extensive reform of the Medical Acts.

VICTOR HORSLEY.

NOTE BY DR. HERON WATSON

Supplementary to the Report of the "Special Committee" of the General Medical Council appointed to consider "the financial relations of the Council."

In circumstances such as those which present themselves to the General Medical Council, where, in the matter of finance, a deficit either exists or is imminent, the great general principle should not be lost sight of, as equally applicable to an individual or a public body—viz., to curtail expenditure to such a point as shall prevent matters becoming more embarrassed—and then, when an assured solvency has been reached, to determine if the expenditure in the past, whether in whole or in detail, was either necessary or beneficial, and then conclude whether it is to be continued or how it may be best met.

1. Such a line of action upon the part of the "Special Committee" appointed by the General Medical Council to consider the financial relations of the Council and to suggest some measure of relief seems to me to be hardly met by the proposal that the initial registration fee for practitioners should be raised or that an additional charge should be imposed upon the somewhat slender income of the great mass of practitioners whose names appear upon the Medical Register, as such a measure will most certainly risk the opposition of the medical profession and would tend to render the General Medical Council unpopular.
2. A self-imposed restriction upon the faculty of much speaking on the members of the Council, with a commensurate shortening of the meetings, a greater number of hours devoted to the actual business of the Council and its committees, implying, if need be, morning, afternoon, and evening sittings, might well be adopted as a preliminary tentative measure, and should this increase in the number of hours prove insufficient the withdrawal of all fees for attendance upon the meetings while only travelling and hotel expenses be continued might most reasonably be adopted.

Certainly it appears to me that some such self-denying regulation should be passed so as to manifest to the medical profession that what is done by the Council is due to a single-minded determination to confer benefits and not to bind burdens upon the profession at large.

3. So far as I have considered this matter—and it is no new question to me—I am strongly impressed with the feeling that any further pecuniary burdens imposed by this Council for the performance of its duties upon the medical profession will be regarded as a grievance likely to be resisted at every point, more especially where this additional impost can only be obtained by the introduction in Parliament of an amendment to the Medical Acts.
4. In such circumstances it may be well carefully to consider whether before such a tribunal as the Houses of Parliament the medical practitioner upon the Register on the one hand or the General Medical Council on the other be the more likely to obtain support such as will be required to meet successfully the exigencies of such a conflict.

PATRICK HERON WATSON.

The PRESIDENT explained that he himself was chairman of the committee but he thought that it would be well that Mr. Horsley should present the report.

Mr. HORSLEY moved that the report be received and entered on the minutes. He felt a certain difficulty, he said, in the matter. He had appended to the report a note simply to preserve his political consistency on this question. He had always held, and still held, that an annual registration fee was the proper means of their meeting their financial difficulties, but in the committee when the vote was taken on this point he found himself in a minority of one. With this explanation he ventured to ask the Council to accept the report as a step forward in financial reform. He believed that as a matter of fact the Council was prepared to consider fully any project which could be made to it which had a reasonable hope of success, but in saying that he would direct the attention of the Council to another note at the end of the report, a most important note by Dr. Heron Watson, because in that note there was raised a question which really was scarcely before the committee. The committee had a distinct reference to it to find out how in their opinion the finances of the Council might be renovated and Dr. Heron Watson thought that a more fundamental step should be taken in the direction of diminution of expenditure. He believed that the members of the committee were not satisfied that the present deficit would be met in this manner and they certainly were not satisfied that however reasonable it might be in an individual to cut down expenditure in the manner suggested it would be reasonable for this Council to take the step considering the work it was expected to do under the Acts of Parliament. The committee had come to the conclusion that, roughly speaking, from £10,000 to £12,000 were required to balance the accounts of the Council, and, further, they were assured that if there was a small increase in the initial registration fee of practitioners and if a registration fee for students was created these two means would provide the necessary funds. As to the mode in which the expenditure and income of the Council should be conducted the committee proposed to introduce a very sweeping system of reform. The present position of the Council was most anomalous—a position thrust upon it by the Medical Act of 1858. Although it had to conduct really the whole business that was ever brought before the Council or its branches it nevertheless actually had no reliable income above a few hundred pounds. The income only approached it indirectly through the branches. This system the report asked the Council to abolish altogether. The Council was asked to provide that the income as it was paid into the branch offices should be at once sent to the central office of the General Council, so that that would centralise

the aggregation of the income. Naturally they must have the expenditure similarly controlled from the centre and that also was proposed in the report. There was an annex to this part of the subject to which he must refer at greater length. Members who had given particular attention to the difficulties of the financial position of the Irish Branch would remember that the sums of money standing to the credit of the English and Scotch Branches had always been a source of mystery and it was only three years ago that they learned that the branches had no legal right to hold these accumulations of income. The report proposed that the money should be handed over to the account of the General Council. He hoped and believed that this proposal would recommend itself to the Council and there would be no particular difficulty in carrying it out. The alteration of the income was, of course, a difficult procedure, for it would require an amendment of the Medical Acts.

Mr. JACKSON seconded the motion for the reception of the report and its entry on the minutes.

Dr. BRUCE intimated that he desired to add his name to the note prepared by Dr. Heron Watson.

Dr. ATTHILL said that he concurred in everything in the note except one point and that was that he did not think it would be wise to discontinue the payment to members of the Council.

The motion was then agreed to.

Mr. HORSLEY, by way of raising a general debate, moved the first recommendation of the committee—

That the principles of amendment of the financial position of the Council embodied in the report of the Financial Relations Committee be approved.

Sir CHRISTOPHER NIXON formally seconded this motion.

Dr. NORMAN MOORE said that he would like an answer to the question whether the Council had power under the present Acts to compel students to register. If it had not this power then this proposed fee would be an uncertain source of revenue. Obviously it would be necessary to obtain a clause in an Act of Parliament compelling the registration of students.

Dr. ATTHILL: That is the intention.

Dr. NORMAN MOORE said that this was what he wanted to learn. If students were to be compelled to register there must be some advantage either to the students or to the public or to both. Were the Council prepared to demonstrate that? What would be the advantage to the students? None. What would be the advantage to the public? It would not secure that the students had studied any longer time. He was afraid that the House of Commons would be very particular to inquire what were the advantages. It seemed to him that in relying upon this as a source of revenue they were relying upon what it was improbable they would get, and he would go further and say at once that he thought it would be a most unjustifiable thing to turn a voluntary registration, whatever its benefits, into a means of increasing the income of the Council. How did the public look upon that sort of procedure? A man said, "I am doing something. I do it for nothing but it is a very good thing to be done and now I want some payment for doing it." As to the question of charging a larger fee to practitioners on registration, he regarded the keeping of the Register as the most important function of the Council and the one in which it did the most useful service to the public. The Council was clearly entitled to charge a fee when a man's name was placed on the Register. Would it be possible to charge a higher fee? His own opinion was that if the fee were bigger there would be no difficulty in obtaining it but before they went to Parliament for this power they must make it clear that they used the funds now in their possession in the most thrifty fashion and that by this additional income they would do still better work. He could not help feeling that it would lead to very elaborate criticism of the way in which they spent their time and it would be said, "Is it worth while to buy more of this kind of thing?" He thought that that was the way the public would put it.

Dr. ATTHILL said that it would be absurd to attach a fee to registration which was not compulsory. He thought it should be compulsory and that such an arrangement would be for the advantage of the public and the profession.

Dr. MCVAIL said that he did not think they should discuss this question of the registration of students. Parliament would never sanction registration merely as a means of getting a fee for this Council. He was confident, however, that Parliament would sanction a raising of the fee for practitioners on entering the Register if the Council made out a sufficiently good case. What would the case be? He dissociated himself from the view taken by Dr. Norman Moore. Dr. Norman Moore's speech implied that the Council did its work in such a way that Parliament would not buy any more of it. He did not know whether this Council was more perfect than other bodies but it was not less perfect. Its volume of minutes was a proof of the quality of its work and he would not have the slightest hesitation in going to Parliament so far as the quality of the work of the Council was concerned. He did not know any body which wasted less time. By the Act of 1858 the Council consisted of 23 members and these 23 were to elect a twenty-fourth who should be President. The Council now consisted of 31 members, the other seven members having been imposed upon it by Parliament. The Act specified that members of Council were to be paid fees and the Act imposed upon the Council the printing and issuing of these registers. The difference between 24 members and 31 would practically account for the financial position in which the Council now found itself. Moreover, the Government had frequently asked the Council to do work not connected with the Act of Parliament. They had sent down the Midwives Bill, for instance, and asked the opinion of the Council with regard to it, and days had been spent discussing matters at the instance of the Privy Council. These were reasons why the Government should not be unwilling to increase the revenue of the Council. Again, the Act of 1858 gave the Council the power of visiting examinations but did not compel the Council to visit examinations. The Act of 1886, however, compelled the Council to inspect the final examinations. That was a new work put upon the Council and he never could understand why the Council did not demand an increase of funds in that connexion. He submitted, therefore, that they had a strong case for going to the Government and to Parliament for additional assistance. While that was so he objected to putting a tax upon the medical student who, in his opinion, was quite enough taxed already. It was a different matter when a man was going in for registration on the Medical Register. Of all the methods suggested in this report undoubtedly the increase of the registration fee was by far the simplest and the one that would commend itself to the Government. The fee was already in existence and it was only an increase that was proposed. He did not think there would be any difficulty in getting the Government to assist them if they went about the matter in the right way.

Sir CHRISTOPHER NIXON said he wished to express his regret that at a time when the Council had so many critics one of its own members should speak adversely of its work and do so unsupported by any grounds whatever. For himself he did not know a body which did its work as well as this Council or had a higher object in view. The work of this Council must be maintained both in the interest of the public and of the profession, and if it was to be maintained there must be sufficient funds for the purpose. Dr. Norman Moore said that he did not see any great use of the register of medical students but the Council attached great importance to it, and he wished to say that by seeking to have a compulsory registration of medical students they went a long way towards securing a uniformity of curriculum. That was shown in the contention which had arisen between the Royal Colleges in England and the Council and if they had a compulsory registration there would be no difficulty. He had had a conversation with an influential Member of Parliament whose view was that there would be no difficulty in getting a moderate increase in the registration fee, and the amount this member suggested was £10. In the case of a barrister he had to pay £50 Stamp Duty before he was called to the bar. If members of this Council considered that they did their duty honestly and faithfully to the public, to the State, and to the profession, he thought there would be no difficulty in securing a sufficient sum of money to carry out their work efficiently and he for one most strongly objected to the suggestion that members should receive no fee for their attendance. He did not think they were called upon to make this additonal sacrifice.

Sir JOHN BATTY TUKE said that a compulsory registration of students would infer the right of this Council to lay down conditions of registration, and although that was a consummation he longed for he thought that no one who knew the condition of feeling amongst the various bodies could fail

to recognise the amount of opposition it would raise. Indeed, he thought the possibilities of obtaining the compulsory registration of students were extremely remote. Very soon after he came to this Council he saw that the Council was gradually slipping into monetary difficulties, that the income would in a comparatively short time fall short of the expenditure, and he and the late Dr. Leishman had the question very fully discussed on at least two occasions and endeavoured in every way they could to get the Council to think of the serious state of affairs which was likely to ensue. The remedy which appeared to him then as the only one likely to be of any effect was a reduction of the fees of members and he still held to that. He thought that the Council would be in a much more dignified position if members rendered their services to the profession and the public without any remuneration whatever. A further suggestion he made at the time was that the Council if it objected to the reduction of fees should sit for a greater number of hours each day. What would be the state of the case if they went to Parliament? They would show that a large proportion of the expenditure of the Council consisted of fees paid to members, and the first question asked would be, "How long do you work?" The answer was that they worked four hours a day. Rightly or wrongly the average Member of Parliament would say, "We work eight, nine, and 10 hours a day." It would be perfectly useless to lay down to Parliament the difficulty and the nature of the work of this Council. The first thing Parliament would say was, "You must not ask the profession to make further sacrifices; try to make some sacrifices yourselves;" and he believed that it was upon these lines they should work. He was entirely in accord with the opinion expressed by Dr. Heron Watson.

Sir CHRISTOPHER NIXON: Would it not be quite competent for any member not to take the fee?

Dr. HERON WATSON: Yes; and he would be regarded as a most superior person.

Dr. BRUCE was sure that all Dr. Norman Moore meant to say was that when they went to Parliament they would be asked, Were they already doing work sufficient for the money they got? He agreed with Dr. Watson and Sir John Batty Tuke that they should seriously consider in what way they could economise the money they already got. For instance, he thought the meetings of each session should not be confined to one week, the committees meeting on the Saturday before the Monday on which they started.

Mr. BROWN considered that economies might be effected in various directions. For one thing, he thought the work and expenditure of the Scottish Branch Council ought to be done centrally by the Council itself and that would effect a considerable saving, for it appeared to him that the expenditure of the Scottish Branch Council was somewhat extravagant, if not excessive. Then they might reduce the number of members of the General Medical Council and the representation of licensing bodies who were merged into one. He could not see why the Royal Colleges of Physicians of London and Surgeons of England, which formed the English Conjoint Board, should be represented by two members.

Dr. NORMAN MOORE: It is not a fact that the Royal College of Physicians of London is merged into the Royal College of Surgeons of England.

Mr. BROWN: Practically they are—in the English Conjoint Board.

The PRESIDENT suggested that Mr. Brown was going beyond the report.

Mr. BROWN: Well, sir, if we determine to go to Parliament for economical measures I shall bring before the Council economies in the directions I have indicated. I do not feel quite sure that sufficient grounds have been made out for putting a registration fee on students, but I certainly think that we might increase the initial fee for the registration of practitioners, and I think it would conduce to the greater correctness of the annual issue of the Medical Register if there was a small annual fee, for even with all the care that is now taken in the preparation of the work there are in it many errors which would not be visible if we had annual registration.

The PRESIDENT, after a pause, remarked that they had now got to consider how they were to come to a conclusion on the matters which the report raised. Mr. Horsley's motion was before them proposing to approve of the principles of amendment of the financial position of the Council as embodied in the report. The question of revenue had been discussed but the very important question of administration had not been touched. The question of revenue resolved itself into three parts—the raising of the fee, substituting an annual fee for an initial fee, and instituting a students' registration fee. He should hold that the principles of amendment would embody one or other of these three parts. If they agreed to proceed with amendment they might take a vote as regards these three parts and then they would raise a direct issue. The question was how to bring the subject before the Council so as to get its opinion and he thought that he should have to ask Dr. Heron Watson to formulate an amendment to Mr. Horsley's motion.

Dr. MACALISTER suggested that in deciding upon the principles it might be advisable to express these one by one in the form following:—

That the Council approves in principle of the following proposals for fresh legislation contained in the report of the Financial Relations Committee:—

1. That a fee of £1 be charged for registration in the Students' Registers.
2. That the initial registration fee for practitioners be raised from £5 to £7.
3. That the financial administration of the funds should be remodelled so far as the mutual relations of the Council and its Branch Councils are concerned.

Mr. HORSLEY accepted this expansion of his motion but he considered that Mr. Jackson's notice of motion in respect to annual registration should be dealt with as a separate and substantive proposal after (1) had been disposed of, because it was an expression of opinion.

The PRESIDENT: Then you might say a few words on the question of administration.

Mr. HORSLEY thereupon read that part of the report headed "(2) Administration," and beginning with the words, "The present system of the administration of the funds." He thought it might well be in the minds of a given Branch Council that the reform advocated was of such a drastic nature that it would encroach on the authority and rights of the Branch Councils. It did not do that at all. The influence and rights of the Branch Council remained unimpaired. If the scheme did anything it did this—it permitted Branch Councils to spend money and send in the bill to the General Council to pay. Of course, if there was dissatisfaction with the conduct of any Branch Council there would be an opportunity of discussing it in the General Council. So far as the Irish Branch Council was concerned, its present position was entirely due to the structure of the Medical Act of 1858, the system of assessment authorised by that Act being wholly insufficient for the proper conduct of the branch which certainly should be reconstituted.

As no one seemed desirous to say anything further on the question of administration the PRESIDENT asked if anyone had any remark to make on the question of the transference of the monies of the Branch Councils to the General Council.

Sir JOHN BATTY TUKE: Transference involves an Act of Parliament.

The PRESIDENT: Of course.

Dr. BRUCE thought there could be no objection.

Dr. MCVAIL: Should not this be sent to the branches?

The PRESIDENT: It was sent two or three years ago.

Dr. MCVAIL: I do not think the question of their giving up what was entrusted to them by the Medical Act was. This is too big a question to be settled right off by the Council. It should be first sent to the branches.

Dr. PAYNE was of the same opinion.

Dr. LITTLE thought that surely that would be an unnecessarily cumbrous mode of procedure. The Council could vote on the spot.

Dr. ATTHILL's objection to further reference to the Branch Councils was that it would be simply waste of time.

The PRESIDENT proceeded to ask the Council to decide on the first part of Dr. MacAlister's expansion of Mr. Horsley's motion.

Dr. HERON WATSON proposed as an amendment:—

That before the Council commits itself to the principle that further legislation is necessary for the continued solvency of the Council the Financial Relations Committee be requested to report on the economies which it may be possible to effect in the expenditure of the Council and its branches in the direction of the abandonment of fees, and an increase in the time expended on the work of the Council and of its committees in each day of session.

Dr. BRUCE seconded this amendment.

The PRESIDENT pointed out that the distinction between the motion and the amendment was that they should endeavour to bring into harmony with each other the income and expenditure by further legislation, or economies should be brought about internally without fresh legislation.

Dr. McVAIL thought this amendment should be split into two parts. It proposed the abandonment of fees and the increase of work. These two subjects should be taken separately. He was altogether unfavourable to any increase in the Council's hours of work, because, with reading the official papers issued in the morning, attending meetings of committee, and afterwards the meeting of Council, the hours already were as long as they ought to be. So far as fees were concerned he was prepared to support Dr. Heron Watson's proposal.

Dr. BENNETT was opposed to the idea of putting aside the question of fresh legislation. In his view it was perfectly absurd to talk of the Irish Branch Council going on with the present mode of assessment. The branch was, and must continue to be, in a state of bankruptcy so long as that mode of assessment lasted.

Sir WILLIAM THOMSON said that they ought to hear this amendment explained before they further proceeded with it.

Dr. HERON WATSON: If members read the committee's report and my note appended to it they should fairly understand the position.

On a division 11 voted for the amendment and 14 against it; five did not vote and one member was absent.

Dr. NORMAN MOORE proposed an amendment with the same preliminary words as Dr. Heron Watson's contained but concluding with the words "expenditure of the Council and its branches in general relation to the fees and the work of the Council."

Dr. BRUCE seconded this amendment, the terms of it *in extenso* being:—

That before the Council commits itself to the principle that further legislation is necessary for the continued solvency of the Council the Financial Relations Committee be requested to report on the economies which it may be possible to effect in the expenditure of the Council and its branches in general relation to the fees and work of the Council.

Mr. HORSLEY submitted that that was precisely what the Special Financial Committee reported on 18 months ago—a period prior to that at which Dr. Norman Moore became a member of the General Council.

On a division only eight members supported the proposal and it was accordingly declared to have been lost.

On the question that the preamble and (1) be adopted Mr. HORSLEY expressed the thought that it would be better if he withdrew from the position of proposer, seeing that he wished to second Mr. Jackson's proposal for an annual registration fee. The Council consented to permit this and accepted the motion as being proposed by Dr. ATTHILL and seconded by Sir CHRISTOPHER NIXON.

Dr. MACALISTER: It is clear that it is proposed to put students' registration in the Bill contemplated; if agreed to it would appear for the first time in an Act of Parliament.

Dr. WINDLE: For the first time the registration of medical students would become compulsory.

The PRESIDENT: Yes.

Dr. NORMAN MOORE: Then I think that the proposal should begin with the words, "That students' registration should be compulsory and that," &c.

Mr. HORSLEY said that the committee had not raised the great question of the compulsory registration of students. All that they asked to do was to establish a registration fee and the question of compulsory registration ought not to have been brought up at this moment. It would really not come upon the table until the proposed draft Bill was there. He submitted that all the Council was asked to do now was to agree to the desirability of instituting a students' fee.

Dr. WINDLE said that surely the question of compulsory registration was wrapt up in the proposal to institute a fee and he did not see how they could vote on the subject unless it was made clear that compulsory registration of students was included. Otherwise they would be voting for a source of income on which it would be impossible to rely, because it would be perfectly open for any licensing body to say that it did not require students' registration, and if several of the licensing bodies adopted the same course the income from this source would of course be very uncertain.

Sir CHRISTOPHER NIXON: The fee for registration depends altogether on the compulsory registration.

Dr. McVAIL: I entirely approve of compulsory registration of students in itself as a principle, but I entirely object to bring it into operation simply as a means of taxing students for furnishing this General Council with funds. The Council ought to get its funds solely from practitioners entering the profession.

Dr. ATTHILL: The fee paid by a student before registration would stand exactly on the same ground as registration for a practitioner, for both must be paid by the parents.

Dr. LITTLE: I think the debates in this Council have shown that unless we can register students at the time they begin their work we cut away the foundation from medical education. I do not think there is a better way of increasing the Council's funds than by imposing a fee on students for registration.

Mr. HORSLEY: If this debate is continued someone must move an amendment. No mention is made in the report of registration as a subject.

Mr. BROWN said he was anxious to vote for the institution of some fee for the registration of students and that meant compulsory registration, for it was obvious that if registration was to be optional no student would come and put down a sovereign merely for the sake of having his name inserted in the Students' Register.

The Council divided, with the result that 13 voted for, 12 against, three did not vote, and the other three were absent.

It was accordingly carried by a majority of one:

That the Council approves in principle of the following proposals for fresh legislation contained in the report of the Financial Relations Committee: (1) that a fee of £1 be charged for registration in the Students' Register.

Dr. ATTHILL, seconded by Sir CHRISTOPHER NIXON, then moved:

(2) That the initial registration fee for practitioners be raised from £5 to £7.

Mr. JACKSON proposed the following as an amendment:—

That in the opinion of this Council it is desirable that an annual licensing fee of 10s. be substituted for the present registration fee of £5; the annual fee not to be paid for 10 years after registration by those who have already paid the £5 registration fee.

In supporting this proposal he said it appeared to him that the work of the Council had very much increased since its institution. At the present moment it looked to him that if the public wanted to convert the Council into a court for the punishment of medical men for lapses from the path of virtue, as the proceedings during this session indicated that they were somewhat inclined to do so, it was quite certain that their work would further increase. Various modes might be suggested by which the work might be reduced but if they were to carry on efficiently they must have a largely-increased income. He need hardly say that they had new universities springing up all over the country and representation of these must entail a certain amount of extra expenditure on the Council's part. His strong belief was that in the circumstances the best way to obtain an increased income was by the proposal he now made for an annual licence. If they had annual licences on the basis he proposed that would give them an income of £12,000 a year. It would be said that there would be great difficulty in the collection of the annual payment, but surely their collection could be done in the same way as the subscription of men all over the world to the British Medical Association was obtained. There was no doubt that annual registration would secure greater accuracy in the yearly issue of the Medical Register. He had spoken to many medical men in the country and they had approved of the alteration he now suggested. He thought the change would not be objected to by medical men generally, especially when they were convinced of the benefits that would arise from it. Of course, the Council would have to go to Parliament to obtain the powers to alter the system, but he did not see why they should not.

Mr. HORSLEY seconded the amendment. He said that the subject had been discussed by the committee and he knew perfectly well that several of them were absolutely opposed to the proposal. At the same time he wished to point out that if the General Medical Council were going to Parliament for fresh legislation Parliament would ask a *quid pro quo* for any advantages that might be demanded for the profession, and he thought this would be a perfectly justifiable thing to ask from the profession—an annual bargain as between the public and the profession. An annual registration fee was, he thought, a thing that would cause Government to look with great favour on any amendments of the Medical Acts which the General Medical Council might propose.

Sir CHRISTOPHERR NIXON was strongly opposed to an annual assessment. It would impose something on the profession for which nothing was given in return. Parliament

was very unlikely to give it, even if the Council had the machinery for collecting an annual tax. The profession would acquiesce in the increase of the registration fee, but as they would have to pay it themselves they would be strongly opposed to an annual tax and would doubtless take such steps as would ensure the rejection of the proposal by Parliament.

Dr. HERON WATSON declared that the scheme was unworkable. If any such were adopted it would be an act of policing and it would certainly degrade the Council in the eyes of their professional brethren.

Sir WILLIAM THOMSON said that he was once of opinion that the principle of this proposal was one which would meet the difficulty of the Council's approaching bankruptcy, but he had come to the conclusion, after considering the matter very carefully, that the suggestion to put an annual fee on the profession was not one that would be palatable. There was no use of citing the collecting power of the British Medical Association, for the case of that Association and that of the General Medical Council were entirely different. If a member of the British Medical Association was late in paying his subscription he did not cease to be a member of the body, but it was an entirely different thing when they came to deal with a payment for keeping a man's name on the Register. Their medical practitioners were scattered all over the country and if they did not pay at once how was the payment to be recovered? The difficulties were so many that he should not like to encourage departure from the existing system—payment at entrance to the profession. If the initial fee was to be raised he did not think there should be any cheese-paring in the matter and they might as well say 10 guineas instead of the £7 which was now named. Ten guineas was a light fee for entrance to a profession. He was sure there would be no objection to it from the general body of the profession and the gentlemen who would have to contribute that sum would be only too glad to pay it.

Dr. BRUCE said that the difficulty of collecting rendered the scheme absolutely out of question, but there was also this to face—if they were to charge every member of the profession an annual tax the profession must have absolutely entire direct representation. The scheme was not a workable one and put forward the worst way in which an increase of funds might be secured.

Dr. ATTHILL was quite willing that the registration fee should be 10 guineas.

Dr. MACALISTER opposed the amendment. He said that if it were carried the profession would have to be remodeled.

After a few remarks in reply from Mr. JACKSON the amendment was rejected by 22 votes to 3. Three members did not vote and three were absent.

Sir WILLIAM THOMSON moved as an amendment—

That the registration fee be raised from £5 to a sum not exceeding £10.

Dr. ATTHILL seconded, and the proposal was carried by 18 votes to 7, and on being put as a substantive motion was adopted by 18 votes to 6.

On the motion of Mr. HORSLEY, seconded by Sir CHRISTOPHER NIXON, it was agreed without discussion—

(3) That the financial administration of the funds should be remodeled as far as the mutual relations of the Council and its Branch Councils are concerned.

Mr. HORSLEY next moved the second recommendation of the committee, namely :—

That the Financial Relations Committee be reappointed, with instructions to draft, with the assistance of the legal advisers of the Council, a Medical Acts Amendment Bill, carrying out the principles of financial reform approved by the Council,

The wording of that recommendation, he said, was in general terms, because it was thought the Council might alter the principles embodied in the report. In order to give effect to it, it was necessary that they should have a draft Bill constructed. In that Bill certain important questions would be included as being necessary for the fulfilment of the report.

The PRESIDENT: Do you propose to go beyond the report in the framing of the Bill? Do you mean that the Bill should cover any ground other than the ground specified in the report and in the principles of it?

Mr. HORSLEY: Oh, no. The committee will act according to the instructions of this Council.

The PRESIDENT: Oh, no; only in terms of this motion.

Mr. HORSLEY: This motion will become the instructions of the Council to the committee.

The PRESIDENT: What I wanted to make quite clear was that the committee who were to draft the Bill were to be restricted to principles embodied in this report. It might be argued that there is not much use in bringing forward a Bill when there is not much chance of its being passed, but it seems to me that if this Council would put on its minutes such a Bill it would be a step in the direction of securing what it wants.

Sir CHRISTOPHER NIXON seconded the motion.

Dr. MCVAIL said it seemed to him that this proposal would seriously affect the Scottish Branch Council, which had been a very active body in past times and which he wished to see active again. To what extent it would be effective he did not quite see, and therefore what he should do would be to retain his right to act against the motion if, on investigation, he found that it would destroy the powers which were inherent in the Scottish Branch. As he understood the position at present, that branch would loose all power and would become simply a local committee of the General Council.

Dr. NORMAN MOORE suggested that owing to the great difference of opinion which had been evidenced in the divisions it would better the Council's position in the country if they waited until something like unanimity was secured before they drafted a Bill that they would like Parliament to pass.

Dr. ATTHILL hoped they would have unanimity, but how could they come to agreement if they had not the heads of the measure before them? Once these were in sight let them modify them as much as they liked, but in his view it would be a great mistake to postpone this matter indefinitely.

The PRESIDENT: As to what this suggested Bill is to cover, in my judgment it cannot cover anything beyond what is stated in the report—that is to say, an alteration of sections of the existing Acts and the provision of new sections limited to three things.

Dr. MCVAIL: Would you specify what you mean? We have done nothing in respect to administration.

Mr. HORSLEY suggested that by the adoption of Dr. MacAlister's expansion of the committee's recommendation the position had certainly been somewhat altered.

Dr. MCVAIL: This question is growing as we go on. It is a bigger question than I thought it was when we started the discussion and if it in its result is practically to annihilate the Scottish Branch Council it is a question that cannot be settled before the Scottish universities and the Scottish medical corporations have had an opportunity of discussing it.

The PRESIDENT: The committee will have to approve of the financial reform approved by the Council. We have agreed to the three sections as suggested by Dr. MacAlister and the committee's recommendation now before the Council covers these and nothing more.

Dr. MCVAIL: I shall vote against this.

Dr. MACALISTER thought a slight modification of the recommendation would get rid of any difficulty. He suggested the addition of the words "and embodied in the suggested amendments to the Medical Acts on pages 13 to 17 of the report of the Financial Relations Committee."

This addition was consented to and the complete motion now was :—

That the Financial Relations Committee be reappointed, with instructions to draft, with the assistance of the legal advisers of the Council, a Medical Acts Amendment Bill carrying out the principles of financial reform approved by the Council and embodied in the "suggested amendments to the Medical Acts" on pp. 13-17 of the report of the Financial Relations Committee.

The PRESIDENT asked if this should be voted on at once.

Several members informed him that it was now after six o'clock, the fixed hour for adjournment, and they were not prepared to sit later.

The PRESIDENT thought they might in the circumstances suspend the Standing Orders.

Several members: Too late.

The Council adjourned.

SATURDAY, MAY 31ST.

The Council met again to-day with Sir WILLIAM TURNER in the chair.

The Finances of the Council.

Discussion was resumed on the following motion, moved by Mr. HORSLEY and seconded by Sir CHRISTOPHER NIXON, VIZ. :—

That the Financial Relations Committee be reappointed, with instructions to draft, with the assistance of the legal advisers of the

Council, a Medical Acts Amendment Bill, carrying out the principles of financial reform approved by the Council and embodied in the "suggested amendments to the Medical Acts" on pp. 13-17 of the report of the Financial Relations Committee.

Dr. LITTLE moved an amendment to adjourn the discussion and empower the President to make such provisional arrangements for the next meeting and generally for carrying on the business of the Council in the interval as might appear to him most conducive to economy.

Dr. BRUCE seconded this amendment.

The PRESIDENT said that while the amendment was in order it was a question whether he should undertake for even a short period the position of an amiable despot.

After a short debate the amendment was rejected.

Sir JOHN BATTY TUKE, continuing the debate on Mr. Horsley's motion, said that if it were passed it would indefinitely postpone the question of fiscal reform. A Bill would be drafted and it would come before the Council and it would lead to a series of academic debates, and supposing a Bill were approved by the Council it would go to Parliament where it would rank as a private Member's measure and might remain for years and years before being passed. Another consideration was whether there was anything behind this motion. Had they any assurance that this Bill when it went before Parliament would remain the Bill of this Council? Had they any assurance that it would not be indefinitely extended? It seemed to him very much as if it were a lever for the upsetting of the whole of the existing Medical Acts. If the Council wanted to save money it must begin from within. All talk about Bills and things of that kind represented so much wasted time. Either go on spending the money—the £20,000 or £30,000—as long as it lasted and then go into bankruptcy or let them institute practical economy and exercise some sacrifice.

Dr. MACKAY said that when the Bill had been drafted it would be for the Council to consider it carefully and in the meantime he thought it would be well for the Council to consider what economies could be practised. He therefore moved as an addition to the motion "and that it also be remitted to the committee to consider what economies in the expenditure of the Council it may be possible to effect."

Dr. FINLAY seconded this proposal.

Dr. PYE-SMITH said that while he agreed with the endeavour to simplify the finances by having them in one place, he did not agree with the justice of increasing the registration fee of professional brethren which he thought would be very unfair indeed. In his opinion one reform they should aim at was a reduction in the membership of the Council.

It was agreed to accept the addition to the motion proposed by Dr. Mackay.

Mr. HORSLEY assured the Council that the committee was perfectly ready to see what economies could be practised.

Dr. ATTHILL, seconded by Mr. TOMES, moved the closure and it was agreed to without a vote.

A vote was then taken on Mr. Horsley's motion with the addition proposed by Dr. Mackay, when 20 members voted for it, four against it, six did not vote, and one was absent. The motion was accordingly carried.

On the motion of Mr. HORSLEY, seconded by Sir CHRISTOPHER NIXON, it was agreed that the report of the committee should be presented at the November session.

Report of the Finance Committee.

The next business was the consideration of the report of the Finance Committee for the year 1901. The following passages occur in it:—

> The Finance Committee report that the income of the General and Branch Councils for the year ending December 31st, 1901, was £3857 0*s.* 7*d.*; the expenditure for the same period was £10,065 12*s.* 7*d.*; consequently there is a deficit on the year's working of £1508 12*s.*
>
> From Table A it will be seen that the receipts from fees show a decrease of £79 4*s.*, the English Branch having received £6 7*s.* 6*d.* less than in the previous year, the Irish Branch £105 16*s.* less, and the Scottish Branch £32 18*s.* 6*d.* more. A further falling-off in the general amount received from these fees must be anticipated in the near future, for the number of students registered in the last three periods of six years (which is the average time taken to complete the curriculum) is as follows:—

Years.	Students.	Average per annum.	Decrease in average.
1884-1889	11,631	1,938	—
1890-1895	11,178	1,863	75
1896-1901	9,575	1,596	267

> That is to say, that the average number of students registered in the last period of six years is 267 per annum less than the number registered in the previous similar period and the effect must appear before very long in the receipts from fees.
>
> A statement of the expenditure of the General Council comparative with former years will be found in Table B. The chief items calling for explanation are:—
>
> (*a*) A decrease of £439 19*s.* in fees to the General Council, the sessions having been three days shorter than in 1900.
>
> (*b*) A decrease of £164 10*s.* in various committee fees, the cost of extraordinary meetings having been exceptionally high in 1900.
>
> (*c*) An increase of £87 16*s.* 3*d.* in the printing of Registers, to which the attention of the Stationery Office has been called, and a reduction is expected this year.
>
> (*d*) An increase of £55 19*s.* 9*d.* in house expenses, being the cost of the electric fan in the Council chamber.
>
> (*e*) A decrease of £263 17*s.* 2*d.* in law expenses.
>
> (*f*) An increase of £315 13*s.* 10*d.* for inspection of examinations, a new cycle having been begun.
>
> (*g*) An increase of £57 17*s.* 7*d.* in miscellaneous expenses, caused by the fee paid to Mr. Frere for his report on finance.
>
> The summary of the results is as follows: the income of the General and Branch Councils in 1901 was £100 8*s.* less and the expenditure £370 12*s.* 11*d.* more than in 1900.
>
> A new table, C, shows comparatively the income and the expenditure of the three Branch Councils for the past three years and it will be noted that the expenditure is increased in each case by the exceptional expenses of the election of the Direct Representatives. The chief points which call for attention are: (1) that the increase in office expenses of the English Branch is mainly due to the issue of circulars of inquiry regarding the accuracy of addresses in the Register; and (2) that the fees paid to the Scottish Branch Council show an increase because the meetings summoned in connexion with the election are not charged to that account, as is done in the case of the other two branches.
>
> Table D shows that the Pharmacopœia being excluded, the expenditure of the General and Branch Councils for 1901 has exceeded the income by £1508 12*s.*, as against the average excess for the past seven years of £1201 19*s.* 1*d.* The percentage-rate is 93·51, as against the average for the same period of 91·80. In the past year the elections are responsible for a large part of the deficit, but no great reduction in expenditure can be anticipated for the present year on account of the expense of the extraordinary meeting of the Council in February and the cost that will be incurred in the inspection of primary as well as of final examinations.
>
> The Irish Branch began the present year with a cash balance of £408. Assuming its receipts from fees to be about the same as before, say £800, it ought to be able to meet its expenses without the aid this year of a grant from the General Council, whose expenditure will therefore benefit by this reduction. The Irish Branch will, it is hoped, be able to effect some reduction in its office expenses in the immediate future.
>
> Table E shows that the assets of the Branch Councils have decreased by £1008 12*s.* during the past year.
>
> From Table F which shows the receipts and expenditure in connexion with the Pharmacopœia, it will be seen that the debit balance of £288 8*s.* 7*d.* brought forward at the close of 1900, which was the first year in which this account was kept separate, has been reduced to £112 13*s.* 4*d.*, and the sale of the stock in hand, together with the profit on the sale of the Government of India Edition of the Addendum, should turn this into a credit balance at the end of the present year.
>
> *Dental Finance.*—Table G shows that the receipts of the dental fund were £365 5*s.* 9*d.* more than its expenditure, and its assets are therefore increased by this amount.
>
> *Sinking Fund.*—Mr. Tomes brought before the committee the subject of the Sinking Fund and handed in a statement which is printed at the end of this report.

SINKING FUND.

The complications introduced into the finance of the Council by the wording of the Act render it indispensable, in order to get a clear idea of the matter, to consider it in its effect upon the finances regarded as one whole and upon them regarded from the point of view of the independent funds of the several branches.

1. Taking the funds as one undivided whole.

The general idea of a sinking fund is the setting aside of money annually in sufficient amount to make good in a given period of years the depreciation of a wasting security. But the freehold of the premises is not a wasting security; on the contrary, it will almost surely have largely increased in value before the expiration of the term and indeed is probably now worth considerably more than the cost price at which it stands in the accounts. A sinking fund in any ordinary acceptation of the term is not at all called for and is inappropriate.

2. Taking the funds of the branches as having independent existence.

It was urged in favour of a sinking fund that by this means in 50 years the General Council would be placed in possession of the freehold unencumbered by a mortgage, while the funds of the English Branch would be retained intact by the repayment of its mortgage.

This is, however, quite fallacious. In order that it may have the money wherewith to pay the annual premium the Council has to call upon the branches for a larger annual contribution than would otherwise suffice, in the proportion of their percentage shares. Under the rates shown on the last balance-sheet the English Branch is called upon for an additional £121 in round numbers. On a 2½ per cent. table and taking Consols at par so as to be on the safe side, this amounts in 50 years to no less than £11,800, so that out of the £25,000 which it is then to receive the English Branch will have provided no less than £11,800, or in other words will receive net £13,200 in discharge of its £25,000. If there were no sinking fund at all this asset of the English Branch would be as good at the end of 50 years as it is now; by the establishment of the sinking fund it loses £11,800. This is such a shockingly bad bargain that nothing more need be said from the point of view of the interests of the English Branch except that so long as the Irish Branch does not really contribute its quota but has to be subsidised out of the funds of the other branches the figures would work out even worse than these.

THE SCOTTISH BRANCH.—The rate of extra contribution called for from the Scottish Branch is about £72 per annum, or on the same tables nearly £7000 in the entire period—considerably more than their present assets. But at the end of the period they will experience some advantage in no longer being called upon for their contribution towards

the mortgage interest, at present some £240 per annum, as there will be no rent to pay in this or any other form.

THE IRISH BRANCH.—Their nominal contribution to the sinking fund is about £21 per annum, or a total of £2000 in round numbers, but, as already remarked, this seems likely not to be really provided by them but out of the subsidies which they receive.

GENERAL CONSIDERATIONS.—The real effect of the sinking fund, as was pointed out by Mr. Tomes and subsequently fully endorsed by Mr. Frere's report, is a gradual transference of the assets of the branches to the General Council to the extent of £25,000. This is not provided for under the Act and may be *ultra vires*, but it is not worth while to labour this point. What is of more practical importance is that by the sinking fund the Council of to-day, in face of an annual deficit of from £1200 to £1500 a year, not likely to be less for some years to come, is setting aside a sum of money for the betterment of the Council in a remote future. That, in fact, taking the Council and its branches as a whole, it may actually be placed in a better position than it is at present by the receipt of a lump sum of £25,000.

Eliminating all the confusion arising from the system of accounts dictated by the Act the common-sense issue amounts to this: Is it the business of the Council of to-day, with financial difficulties in full sight and with an income inadequate and likely to be still more inadequate, to be making provision, not out of its surplus but as an addition to its deficits, for the Council of 50 years hence?

On the motion of Mr. BRYANT, seconded by Dr. PYE-SMITH, the report was received and entered on the minutes.

Mr. TOMES moved a motion to the effect—

That the payments to the Sinking Fund be discontinued and that the necessary steps be taken for obtaining, according to the agreement, a refund of a proportion of the payments already made.

Dr. ATTHILL seconded the motion.

Mr. BRYANT, while recognising the force of the arguments in favour of this step, viewed the withdrawal of the sinking fund with regret.

After a short debate the motion was agreed to.

Primary Examination of the English Conjoint Board.

It was agreed, on the motion of Mr. BRYANT, seconded by Dr. NORMAN MOORE—

That subject to the approval of the Privy Council the remuneration of the persons appointed to visit the primary examination of the Examining Board of the Royal Colleges in England be at the rate of £5 5s. a day with travelling and hotel expenses.

The Prevention of Personation.

The Council then went into committee for the further consideration of the report of the committee on the Prevention of Personation. This report was before the Council in committee during the last November session and certain of the proposed regulations were then dealt with. The report, however, was sent back to the committee with a view of obtaining the opinion of the branch registrars on the regulations.

Mr. HORSLEY intimated that the comments of the branch registrars had been obtained and it was agreed that they should be entered on the minutes.

The following regulation was adopted in substitution of the first regulation passed in November, viz.:—

All forms of application for registrations duly signed and presented shall be preserved by the Registrar of the Branch Council, to whom they may be presented in such a manner as to be easily accessible for reference.

Mr. HORSLEY moved the adoption of this regulation, viz.:—

No certificate of registration of any name on the Medical or Dentists' Register shall be given except in respect of a registered medical or dental practitioner whose name does not appear in the current printed issue of the respective Registers.

He stated that in the present state of things it was possible for a man to go into the office, put down a merely nominal fee, say he was Mr. So-and-so, and get a certificate of registration.

Sir CHRISTOPHER NIXON seconded the motion.

Sir JOHN BATTY TUKE did not think the matter was quite so simple as Mr. Horsley suggested, because there must be a statutory declaration.

Mr. HORSLEY said that the thing had been actually done with consequences of the most distressing kind.

The PRESIDENT asked the Council to consider whether this regulation would give the Council any greater security than did the existing regulations.

Mr. HORSLEY pointed out that this was in addition to the existing regulations.

Dr. MACALISTER said that during the war the authorities of the War Office had frequently required duplicate certificates and he saw no reason why the Council should not make a reasonable provision for their issue.

Mr. HORSLEY said that once a man had his name on the Register the onus of proof lay with the person who disputed his statement that he was registered.

Dr. HERON WATSON thought it quite a legitimate thing that a man should be able to get a duplicate and his impression was that the Act provided for it.

Dr. MCVAIL expressed the opinion that the regulation was unnecessarily severe.

Mr. HORSLEY said that the certificate which was issued by the office at the time of registration was only valid until the appearance of the next issue of the printed Register.

On a division the proposed regulation was rejected.

Mr. HORSLEY moved the following motion, viz.:—

All applications for restoration to the Medical or Dentists' Register or for registration under exceptional circumstances shall be accompanied by a statutory declaration drawn in the terms stated in the forms included in the accompanying schedule.

This motion was under discussion when the Council adjourned.

MONDAY, JUNE 2ND.

The Council resumed to-day, Sir WILLIAM TURNER being in the chair.

The General Registrar.

In the absence of Mr. H. E. Allen, Registrar, Dr. MACALISTER, chairman on the Business Committee, called the roll and read the minutes of Saturday's sitting.

The PRESIDENT said that on Saturday afternoon the Registrar had asked leave to go home on account of the serious illness of his wife and in the evening he (Sir William Turner) had received a telegram announcing the death of Mrs. Allen. He had written to the Registrar to say that the Council would excuse his absence from the present sitting and Dr. MacAlister had kindly undertaken to act for him. Considering the long and faithful services which he had given to the Council his feeling was that they should record on their minutes an expression of sympathy with Mr. Allen.

On the motion of Dr. MACALISTER, seconded by Mr. BRYANT, the President was then asked to convey by letter to the Registrar an expression of the Council's sincere sympathy in the severe domestic bereavement he had sustained, it being agreed that the formal motion should form part of the minutes.

The Examinations of the Scottish Conjoint Board.

The Council proceeded to consideration of a report by the Examination Committee on the visitation and inspection of the final examinations in medicine, surgery, and midwifery for the triple qualification of the Conjoint Board of Scotland, by the visitor, Dr. Payne, and the Inspector, Sir George F. Duffey, M.D., appointed by the General Medical Council, together with remarks by the body inspected (April-July, 1901).

Mr. BRYANT, in moving that the report be received and entered on the minutes, said that the report was a very interesting one and had been very carefully drawn up. The visitor and inspector had gone through their work thoroughly, as they generally did. He did not propose to go through the report by these gentlemen or the remarks of the body visited, but he wished to call attention to the remarks of the Examination Committee on the whole. These were as follows:—

The visitor and inspector of the Scottish Triple Conjoint Board of Scotland, having declared the final examinations for the triple qualification "to be sufficient," the Committee of Management of the Conjoint Board express their gratification at the general tenor of the report, although on certain matters of detail it was critical. The Examination Committee is satisfied with these conclusions.

It is pointed out in the remarks by the body inspected that this Committee of Management of the triple Board has, since the date of the last inspection, discontinued—what this Council then condemned—the methods of allowing candidates to enter for the final examination in divisions or single subjects, although it is necessarily still permitted in the case of candidates who passed the second examination of the Board before August, 1896. It will be satisfactory to this Council when the practice has been entirely discontinued by those bodies who still permit it.

The visitor and inspector point out at p. 8 of their report that in the Edinburgh written examination, as soon as the candidates took their seats, three sets of printed questions were given to each—viz., one in medicine, one in therapeutics, and one in surgery and surgical anatomy—and that four hours were allowed to write answers to the eleven questions assigned, the candidates using their own discretion in apportioning the time among the three papers. The committee is, however, informed that this practice is not always followed.

At p. 18 of the same report it was recorded that at the Glasgow written examination, instead of three papers of questions in two or more different subjects being given out simultaneously, they were given out singly, and a definite time was allotted for each paper. This committee suggests that the practice in Glasgow should be adopted at the examination in Edinburgh.

At neither examination was the average time (half an hour) recommended by this Council for answering each question allowed. In such important subjects as medicine, surgery, and midwifery the full time

of half an hour should be allowed for the answering of each question, although in less important subjects the rule possibly need not be so binding.

The clinical examinations in Edinburgh and Glasgow, including the examination of patients and the chemical and microscopical examination of urine and other specimens, were approved by the visitor and inspector, and it is clear to this committee that upon the whole they were well arranged. Failure in clinical medicine or surgery excludes from the oral examination in the same and allied subjects.

In Edinburgh each candidate in medicine was examined on two patients (p. 11) by one or other of the two examiners and where doubt existed the candidate was given a third. In surgery, however, each candidate was required to examine one patient only (p. 12) and was directed to mark on a patient the lines of incision for two operations. The candidate was subsequently examined upon the clinical case and also upon the assigned operations for about 20 minutes, and later on upon the names, uses, and modes of employment of surgical instruments and appliances.

At Glasgow the clinical examination in medicine differed from the one at Edinburgh in a written report of one case being required from each candidate and in the examination being conducted throughout in the presence of and by both of the examiners (p. 19). In surgery each candidate took notes of one case for which he was allowed 10 minutes and was orally examined upon two others; he was likewise examined in surgical anatomy and the uses and application of splints and instruments. The examination was pronounced by the visitor and inspector as an excellent one, but this committee is of opinion that 10 minutes for examining and reporting a clinical case is quite inadequate.

The Examination Committee would suggest that the Board of Management should arrange that in future every candidate at this clinical examination should be examined on at least three patients and that two examiners should together throughout conduct the clinical examination. To test a candidate in clinical surgery upon one case is insufficient.

The visitor and inspector state that "the plan of sending a schedule round with the candidate at each part of the examination" (p. 39), which contains not only the subjects upon which the candidate has been examined, but also the number of marks gained by him at each preceding part of the examination, is not a good one. This committee regard such a schedule, which carries out the first purpose, to be an essential aid to the examiners, but can see no good result to be gained by the second purpose, for by such an arrangement a too sympathetic examiner may be induced, in order to enable a candidate to pass, to give marks in excess of those he would have given when estimating only the value of the part of the examination in which he was concerned.

The absence of an examination in operative surgery is in the opinion of this committee greatly to be regretted. It is said to arise from difficulties connected with the working of the Anatomy Act.

The history of the oral examination of one candidate in surgery as described in pp. 16 and 17 of the report and commented upon by the body inspected on p. 41 is regrettable. This committee trusts that such an occurrence has been exceptional. The marks decided on by the two examiners engaged at the time should be arrived at with judicial care and given as their final judgment. It is to be regretted that the visitor and inspector were both absent at the re-examination of this candidate.

Dr. NORMAN MOORE seconded the motion.

Dr. HERON WATSON, referring to the last paragraph of this report, stated that he had received a letter from Mr. Cotterill, one of the examiners who had had to do with the examination of the candidate alluded to, explaining that Dr. Barlow, his colleague, and he had for a time had doubts whether the candidate should be "referred" in surgery or not. They, however, had agreed on a number of marks to allow him. The whole Board of Examiners thought he should be re-examined. Dr. Barlow had declined to assent to re-examination. But he (Mr. Cotterill) had undertaken re-examination and the results were such that the Board expressed the opinion that the candidate should be passed He (Mr. Cotterill) was of opinion that the man did well enough to pass, though he did not express that opinion at the time the examination was going on.

Sir HECTOR CAMERON said that he had no personal knowledge of this matter but he had heard it discussed. His information was that Mr. Cotterill and Dr. Barlow examined the candidate in question. They had, no doubt, some difference of opinion, but after discussion they agreed to allow him 45 points—50 being the minimum pass number. On the matter coming before the general Board of Examiners somebody said, "Well, he wants only another five marks in surgery, let us re-examine him." To this Dr. Barlow objected. However, it was arranged that he should be re-examined, but by that time the candidate had left and so also had both visitor and inspector. Later the candidate was re-examined and passed He believed that was what occurred, but the incident was not one that he could honestly say he approved of. It was not in accordance with the rule of the Conjoint Board to permit the re-examination of any candidate in regard to whose work at an examination both examiners had agreed upon the number of marks to allow. If there had been disagreement between the examiners the Board might, as they usually did in such cases, have ordered re-examination.

Dr. MACALISTER pointed out that the report stated that the number of marks awarded was not 45 but 40.

Sir HECTOR CAMERON had repeated only what he had heard.

Dr. PAYNE said that whether the marks given were 40 or 45 they were below the pass number, and the remarks of Sir Hector Cameron simply confirmed the report of the visitor and inspector.

Mr. BROWN hoped it would be understood that the General Council could not tolerate procedure of the kind under discussion. If a candidate was rejected he must regard it as a very serious matter, indeed, if that candidate by some means or other was passed without being sent back for a further period of study. The minimum marks were not sufficient for a pass, but when a candidate did not reach even the minimum he regretted that any examining board should allow him to pass.

Mr. HORSLEY asked Dr. Payne why he had reported that the examination was "sufficient." The General Council was the only body to declare an examination "sufficient."

Dr. MACALISTER pointed out that the Medical Acts laid it down that there might be an opinion expressed by the inspector as to the sufficiency or insufficiency of the examination.

Dr. PAYNE said that he had reported in accordance with what he believed it was his duty to report. When he applied the word "sufficient" he did not mean that the examination was perfect but in the ordinary sense "sufficient."

Sir WILLIAM THOMSON thought that Mr. Horsley was much too particular and defended the visitor and inspector's use of the word "sufficient." In his view, although the examination was not a perfect one, it was yet "sufficient" in the view of the visitor and inspector. It might have been imperfect in certain particulars but that did not destroy the sufficiency of the examination.

The motion to receive the report and enter it on the minutes was then agreed to and it was also agreed to adopt the report of the Examination Committee on the report.

The PRESIDENT, in answer to Mr. BROWN, stated that when the three years' cycle of inspection was completed it might be that the report, with all the rest, would be considered in committee of the Council.

The Examinations of the Royal University of Ireland.

Mr. BRYANT read the following report by the Examination Committee on the Visitation and Inspection of the Final Examinations in Medicine, Surgery, and Midwifery of the Royal University of Ireland, held in October, 1901, by the Visitor, D. C. McVail, M.B., and the Inspector, Sir George Duffey, M.D., appointed by the General Medical Council, together with remarks by the body inspected (May, 1902):—

The visitor and inspector were of opinion that all the arrangements made for the final examination were excellent. There were 35 candidates, including one woman, and 13 examiners drawn from many different quarters.

At the clinical, oral, and practical examinations the candidates are known by their names; but in marking the answers to the written examination and at the final meeting of all the examiners to determine the result of the examination the numbers only of the candidates are before the examiners.

In the written examination the questions given were numerous and sound—about six in each subject; all had to be attempted and plenty of time was allowed for each paper. The visitor and inspector were well satisfied with the marks that had been awarded by the examiners to the papers and were gratified to observe that the majority of the candidates showed an ability to write prescriptions in full Latin with accuracy as to dosage and with a grammatical correctness which is, unfortunately, far from being general at final examinations elsewhere.

The clinical examinations are held in the medical and surgical wards of the general hospitals of Dublin. The candidates are divided into groups of 12.

In medicine two only of the three examiners take part in the examination.

Each examiner had charge of six candidates in one ward and each candidate was in the first instance required to write on a form supplied a report of one case. He was subsequently examined on a second and third case by one examiner and on two or three other cases by the second. On the reported case the candidate was interrogated by the examiner and in most cases required to repeat his physical examination of the patient before the examiner to demonstrate to him the signs elicited and to explain their significance.

The examination was evidently a good one, although care is wanted to prevent a candidate being examined by the second examiner on cases of the same disease as he had been examined on previously by the first.

The clinical laboratory work was well arranged and carried out.

In surgery the clinical examinations were essentially good and practical and there were said to have been an ample number of suitable cases. But no written report of a case was required as in the medical clinical examination, but each candidate was examined on two cases by one examiner. It is not quite clear to this committee why more than two cases were not utilised; it would seem only to be right to raise this part of the examination to the level of that of medicine, in marks as well as in cases.

The examination on ophthalmology was all that could be wished. That on operative surgery was well conducted.

The oral examinations were well reported upon by the visitor and inspector and particularly the one on pathology. This committee would have been pleased to know whether pathological specimens were utilised freely in the medical and surgical examinations.

The visitor and inspector call attention to the fact that in the last report (Vol. xxx., Appendix viii., p. 62) it was suggested that the examination in clinical medicine might be conducted with more efficiency and with less delay by an alteration in the details of the examination and that the remarks made in that report appear still to hold good. They suggest some arrangements by which these changes might be effected and the Examination Committee trust that the authorities of the University will take them into early consideration. With respect to the surgical examination they call the attention of this committee to the fact that the recommendation of the General Medical Council that "a candidate should not be orally examined except in the presence of two examiners" is not observed. They close their carefully-worded report by stating their opinion that the final examinations in medicine, surgery, and midwifery of the Royal University of Ireland are "sufficient."

The remarks of the body inspected are quite satisfactory to this committee. They agreed to recommend "that in future the clinical examinations in medicine should be conducted by three examiners in medicine, instead of by two only, as heretofore"; that the recommendation of the General Medical Council, "A candidate should not be orally examined except in the presence of two examiners," be extended to the oral examination in surgery, and from the tone of their remarks are prepared to consider carefully the other criticisms contained in the report of the visitor and inspector.

The committee of the body inspected recognise the strict and thorough character of the inspection and express their appreciation of the courtesy shown by the visitor and the inspector.

The Examination Committee are pleased with this appreciation of the work, which has been evidently well done, and recognise in these periodical visitations a power which cannot prove otherwise than good in the influence of this Council.

He (Mr. Bryant) moved that the report be received and entered on the minutes.

Dr. NORMAN MOORE seconded the motion.

Dr. MCVAIL, asked by the PRESIDENT if, as visitor, he had anything to say, said that he had looked upon the work with great pleasure. The examination was one of the most admirable that he had knowledge of. It was conducted thoroughly and efficiently with regard to the interest of both the students and the University, and he was quite convinced that any man who took his degree in the Royal University was a man who had been adequately taught and adequately examined.

After some remarks by Sir CHRISTOPHER NIXON, who assured the Council that the Royal University of Ireland, always anxious to comply in every respect with the requirements of the Council, had made arrangements to get rid of defects pointed out by the visitor and inspector, the motion to receive the report and enter it on the minutes was agreed, and so also was the further motion, that the Examination Committee's report on the report be adopted.

The Council went into *camerâ* "to receive a statement from the Examination Committee in regard to the inspection in 1901 of the examinations of the University of Dublin." On the readmission of the public

The PRESIDENT said: The Council has authorised the visitor and inspector of the final examination of the University of Dublin to complete their inspection at the November examination.

Executive Committee.

A ballot resulted in the election of the following members to form the Executive Committee: England—Mr. Bryant, Dr. Payne, Dr. MacAlister, and Dr. Pye-Smith; Scotland—Dr. Heron Watson and Sir William Gairdner; Ireland—Dr. Atthill and Sir Christopher Nixon.

Penal Cases Committee.

The following members were chosen by ballot to form the Committee on Penal Cases—namely, England: Mr. Bryant, Mr. Tomes, Mr. Horsley, and Dr. Windle; Scotland: Dr. Heron Watson and Dr. Bruce; Ireland: Sir Christopher Nixon and Sir William Thomson.

The PRESIDENT explained that the only alteration in the composition of the committee was that Dr. Windle had been selected for the vacancy caused by the retirement of Dr. Glover.

Students' Registration.

Sir HUGH BEEVOR, on behalf of the Students Registration Committee, presented a report on exceptional cases and on the approval of certain recognised teaching institutions. He moved that it be received and approved and entered on the minutes.

Dr. MACALISTER seconded.

Dr. NORMAN MOORE called attention to the following paragraph in the report:—

An application to be registered and antedated under exceptional circumstances:—On behalf of T. T. O'Farrell, who had passed the preliminary examination of the Irish Conjoint Board and had begun medical study at Stonyhurst College in September, 1901, requesting that he might be allowed to register and antedate to the time of commencement of medical study. Resolved: That Mr. O'Farrell be informed that Stonyhurst College has not been approved by the Council as a place for the commencement of medical study.

He thought this resolution of the committee's did an injustice to Mr. O'Farrell; it was not a proper answer to make by this Council because the Council had not taken any special pains to satisfy itself that the institution in question possessed sufficient teaching powers. He moved as an amendment to the committee's resolution—

That Mr. O'Farrell be informed that the Council will make inquiry and if it should be found that Stonyhurst College is provided with laboratory appliances and teachers necessary for the efficient commencement of medical studies his application will be acceded to.

Stonyhurst College, he said, was not a grammar school and it was to be considered on quite a different footing. It had been inspected on two occasions by the Royal College of Surgeons of England and he knew that it had two teachers for physics with laboratory appliances and that there were teachers for chemistry and biology who were furnished with laboratory appliances. In addition, there was a natural history museum of general value. He was not urging that the Council should "recognise" this institution, but he thought the Council was putting itself into a false position by refusing to approve of a school in regard to which they had made no inquiry.

Sir CHRISTOPHER NIXON, in seconding the amendment, said that Dr. Moore's proposal did not commit the Council to an absolute recognition of Stonyhurst. This college, he believed, was recognised by the Conjoint Board, but hitherto it had not come up to the requirements of the Council. If, however, it could be shown that it had sufficient means to give adequate instruction it would be a pity to refuse it recognition.

Sir WILLIAM THOMSON asked what Dr. Norman Moore meant by "inquiry."

Dr. NORMAN MOORE did not wish to employ other than the ordinary means of getting information. If the Council asked him to supply a report he should ask the Conjoint Board if they would lend him their report for the purpose. But he thought the Council might write to Stonyhurst itself and he had no doubt that any information furnished in reply would be trustworthy.

Dr. WINDLE said that Stonyhurst College was a school and certain parts of the scientific teaching power and appliances were used for the lower division of the institution. He should strongly oppose the amendment, for he thought that it was trying by a side wind to override the Council's decision in respect to scientific institutions; and if it were adopted it would in the course of time lead to the Council's visitation and inspection of all such schools.

On a division the amendment was supported by only eight votes and was declared to have been lost, and the motion to receive and approve the report was agreed to.

The Public Health Diploma.

Dr. BRUCE presented a report by the Public Health Committee on a proposed amendment to the resolutions of the Council in regard to diplomas in public health. This report showed that in December last a section of the report of the Public Health Committee was referred back to them for reconsideration. That section was in the nature of an amendment to Rule (3) of the resolutions of the Council of Dec. 5th, 1900, as regards diplomas in Public Health, which reads as follows: "Every candidate shall have produced evidence that after obtaining a registrable qualification he has during six months, of which at least three months shall be distinct and separate from the period devoted to laboratory work as required under Rule (2), been associated day by day in the duty, routine and special, of public health administration under," &c. The precise alteration recommended was the substitution of *three* months for *six* months of outdoor or practical sanitary work, under the personal supervision of a medical officer of health duly qualified to impart such instruction; with the view of substituting a three months' course of lectures in sanitary law and other subjects cognate to the duties of a medical officer of health, such course to run concurrently with laboratory study. The committee have ascertained, as regards outdoor work, that a period of more than three months under present circumstances is impossible to secure in many cases. They consider, therefore, that it is imperatively necessary that the student should give during this

period his whole time and attention sedulously to his duties. On the other hand, it seems to the committee that if the period of training be reduced to three months, the balance of the six months should be allotted to classes in sanitary law, vital statistics, and practical demonstrations in sanitary engineering. Of the advantages to be derived from such a systematic course there can, the committee consider, be very little doubt. The principles underlying sanitary law, vital statistics, and hygiene require to be stated and explained. On the other hand, demonstrations in connexion with arrangements for dealing with sewerage, the nature and use of disinfectants, the sanitary principles in the construction of dwelling-houses, the mechanism and use of refuse destructors, and the storage and filtration of water-supplies, with a moderate amount of knowledge of engineering methods, would prove of the greatest advantage to the student of public health. The committee summarised their views as follows :—

1. In the opinion of the committee at least three months' thorough training in outdoor work should be absolutely insisted upon, apart from all other kinds of teaching.
2. That the medical officer of health should be required to certify that the student has had sufficient opportunities for acquiring a thorough training in practical sanitary work and *that to his knowledge the pupil has honestly taken advantage of these opportunities.*
3. A course of lectures on the principles and practice of hygiene, vital statistics, and sanitary law *may* be substituted for the remaining three months of the six presently set aside for outdoor work, but this is merely in the nature of an option and is not meant to interfere with the present rule as to outdoor work where the medical officer of health conjoins it with teaching.

It was resolved that the report so far should be received and entered on the minutes, and the Council proceeded to consider proposed alterations in the resolutions and rules adopted in December, 1900. The first of these changes was the deletion from Rule 3 of the words "been associated day by day in the duty, routine and special, of public health administration, under the supervision of ——," and the putting in their place words of a more elastic interpretation —viz., "been diligently engaged," &c.—so as to make the complete rule, as revised, read as follows :—

3. Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of ——.

Dr. PAYNE remarked that the Medical Board which he represented took "day by day" as a stumbling-block and he was glad that the committee had found a way to get rid of it.

Dr. MACALISTER mentioned that the "day by day" part of the rule had caused much difficulty in interpretation. The substituted words would, he thought, meet all practical requirements and he believed there would be no longer any misapprehension about the meaning of the rule.

On the motion of Dr. BRUCE, seconded by Dr. NORMAN MOORE, the alteration of the rule was agreed to.

Dr. BRUCE then proposed the following as a second *** note to Rule 3 :—

*** The period may be reduced to three months in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects cognate to sanitary study and work, given by a teacher in the department of public health of a recognised medical school.

Objection was taken that this would cut down a 12 months' curriculum to nine months.

Dr. MACALISTER said that the curriculum at present was a nine months' one and the proposed note simply allowed a rearrangement of the time in which certain things must be done. The irreducible minimum was nine months.

After further discussion the proposal was adopted in this form :—

*** Provided that the period of six months may be reduced to a period of three months, which shall be distinct and separate from the period of laboratory instruction under Rule 2, in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on public health administration, given by a teacher in the department of public health of a recognised medical school.

Dr. BRUCE next asked the Council to add the following words :—

*** Provided also that a registered practitioner of not less than five years' standing may be exempted on cause shown from the regulation as to outdoor work if he produce evidence that he has acted for at least six months as a bona-fide medical officer of health or if he belong to H. M. service in the navy or army, the Indian Medical Service, or the public service of any of the colonies.

Dr. MCVAIL objected to this proposal because he did not think the committee had agreed to the exemption of officers of the army and navy, let alone the others now included.

Dr. MACALISTER thought that if put into operation this regulation would do great harm, because it would tend to reduce the leave that officers serving abroad might obtain to come home in order to go through the curriculum and it would open the door to men who might pass one day, and on the strength of having passed leave the army next day, leaving, moreover, without having had anything whatever to do with sanitary administration in order to undertake sanitary work.

Dr. BRUCE said that he was, of course, in the hands of the Council but personally he was quite ready to withdraw the proposal.

The proposal was withdrawn.

Dr. BENNETT proposed to amend the existing Rule 4—viz. :

4. Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration—

by deleting all the words after the word "diseases."

Dr. NORMAN MOORE, in seconding, said that in London it was extremely difficult to obtain opportunities for instruction in the methods of the administration of a fever hospital. As a matter of fact, in the greater part of the metropolis the regulation was unworkable and he thought that no harm would ensue from its entire omission.

Dr. MACALISTER stated that the regulation had been adopted after a great deal of consideration, and if it remained practically unworkable that was the fault of the bodies who granted public health diplomas because they had not sufficiently pressed the metropolitan hospital authorities to afford the necessary facilities.

Dr. PAYNE said that when he was speaking of this difficulty in London to Mr. Power, that gentleman had remarked that so far as the Asylums Board was concerned it was a difficulty that would easily be got over.

Dr. BRUCE had not heard that and he wished Mr. Power had been present at this discussion. His own experience of local authorities was that they were very chary in giving students the right to see what their administration was. He thought instruction of the kind was necessary and he believed that it was possible to secure it, but he questioned whether it was well to have a rule of this kind standing.

Dr. MCVAIL remembered Sir Richard Thorne, the late chairman of the committee, expressing the opinion that the man was not competent to do the work of medical officer who had not had a course of study in the administration of an infectious hospital. He hoped there was no chance of the rule being dropped.

Mr. BROWN must urge the Council most strongly not to tamper with this rule. It was most important that men should be thoroughly instructed in sanitary work and this rule must operate in the direction of securing that.

Dr. MACALISTER moved that the rule be adhered to.

Dr. MCVAIL seconded.

Dr. BENNETT'S proposal was modified so as to substitute the words he originally proposed to omit by the words "in view of the acquisition of a knowledge of the methods of administration."

It was agreed to treat this proposal as an amendment, and on being put to the vote it was supported by so few members that the President declared it to be lost. Rule 4 consequently was retained without alteration.

Adjustment of the amended report was deferred and the Council adjourned.

FOREIGN UNIVERSITY INTELLIGENCE.—*Freiburg :* Dr. Ernst Roos, *privat-docent* of Medicine, has been promoted to an Extraordinary Professorship.—*Giessen :* Dr. Johannes Pfannenstiel of Breslau has been appointed to succeed the late Professor Löhlein in the chair of Midwifery and Gynæcology.—*Göttingen :* Dr. Bendix has been recognised as *privat-docent* of Medicine.—*Heidelberg :* Dr. Kehrer, Professor of Midwifery and Gynæcology, is about to retire.—*Le psic :* Dr. Saxer, *privat-docent* of Pathological Anatomy, has been promoted to an Extraordinary Professorship.—*Turin :* Dr. Arnaldo Fumagalli of Pisa has been recognised as *privat-docent* of Ophthalmology.

THE ROYAL MEDICAL BENEVOLENT COLLEGE.

THE annual general meeting of the governors of the Royal Medical Benevolent College was held on May 30th, at the office in Soho-square, London, W., the treasurer of the institution, Dr. C. HOLMAN, being in the chair. The scrutineers announced the result of the voting to be as follows:—

PENSIONERSHIPS.

1. Owen, Fanny E.	10397	5. Matthews, Lucy E. ...	4939
2. Sheppard, Margaret M.	9347	6. Wilson, Fanny W.	4339
3. Jones, Caroline M.	9319	7. Nolan, Sarah	3286
4. Johnson, Charlotte... ...	7492		

FOUNDATION SCHOLARSHIPS.

1. Corry, Wilfred L.	8710	4. Cowan, John A.	7325
2. MacNaught, Gerald K. ...	8165	5. Leigh, Reginald H. ...	5625
3. Wallington, William T.K.	8048	6. Sewart, John H.	4483

MORGAN ANNUITIES.

1. Rymer, Matilda S.	7649	3. Wilcocks, Ann...	3578
2. Thackthwaite, Emma ...	3718		

In opening the proceedings, Dr. HOLMAN referred to the amented death of Dr. John Lumsden Propert, a son of the Founder of the College, and proposed a motion of condolence with Mrs. Propert and her family which was seconded by Sir JOSEPH FAYRER and carried unanimously.

In reference to the report for the past year Dr. WINSLOW inquired whether the Council could see its way to have the name of the institution altered to "Epsom College." In replying, Mr. STAMFORD FELCE, the chairman of the Finance Committee, stated that the Council had given most careful consideration to the matter, but it had come to the conclusion that it was inexpedient to make a change, in view of the fact that money was absolutely necessary for the charitable side of the institution, and if the name of the institution were to be altered as indicated it was highly probable that important legacies such as those which had recently been received would no longer be left to the College.

The following were elected members of the Council: Mr. G. C. Croft, Sir Joseph Fayrer, Dr. Latham, Dr. A. C. Latham, Dr. Needham, Rev. E. W. Northey, Mr. H. W. Page, Mr. Pollard, Dr. F. Taylor, and Dr. Thomas Buzzard. Dr. Galton was elected a vice-president in recognition of his having collected £1000.

A vote of thanks was proposed by Sir JOSEPH FAYRER to the chairman, a brief reply from whom brought the proceedings to a close.

ASYLUM REPORTS.

Nottingham City Asylum (Annual Report for 1901).—The average number of patients resident during the year was 704, comprising 343 males and 361 females. The admissions during the year amounted to 205—viz., 128 were males and 77 females. Of these 188 were first admissions. Mr. Evan Powell, the medical superintendent, states in his report that there were 30 private patients in residence during the year. Among the admissions a large proportion of patients presented no prospect of recovery. Thus 18 of them were subjects of senile mental disease, eight were epileptic, and 18 were general paralytics. Among the general paralytics there was a much larger proportion of females than usual. Among the causes of insanity in the patients admitted hereditary predisposition was ascertained in 25 cases, alcoholic intemperance in 19, and mental stress of one kind or another in 29 cases. 50 of the admissions were males suffering from chronic insanity, received under contract from London and East Sussex to fill up vacancies afforded by the opening of the new wing in the institution. The number of patients discharged as recovered during the year amounted to 67—viz., 25 males and 42 females, or 9·5 per cent. of the average number resident. The deaths during the year amounted to 74—viz., 37 males and 37 females, or 10·4 per cent. as calculated on the same basis. Of the deaths two each were due to epilepsy, senile decay, and colitis, four to cerebral softening, four to cardiac disease, five to cerebral atrophy, six to renal disease, nine to phthisis, 27 to general paralysis of the insane, and the rest to other causes. The cause of death was ascertained by post-mortem examination in 70 out of the 74 cases. Of the two cases of colitis one was a patient admitted from a London asylum who died from the disease a fortnight after admission, so that he had probably contracted the disease before admission. The other case was that of a patient who had been in the asylum for some years. "Colitis," adds Mr. Powell, "is said to be in a large measure due to overcrowding; if this be so it is curious that it made its appearance with us some time after the opening of the new wings and when our accommodation was ample. It is undoubtedly an infectious disease, so that every precaution was taken to prevent its spread, and with satisfactory results, as we have not had another case." The new block for male epileptics was completed and occupied in March. The Commissioners in Lunacy state in their report that the wards were bright and cheerful, the dormitories and bedding clean and in good order, the patients neatly dressed and orderly in their behaviour, and the medical case-books well kept. The weekly charge for patients remains the same as in the previous year—viz., 10*s*.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

ON Thursday, July 3rd, a meeting of the Fellows of the College will be held for th lection of four members of Council. Three of the members retire by rotation—namely, Mr. Reginald Harrison, Mr. Howard Marsh, and Mr. J. Hardie. The fourth vacancy is due to the death of Sir William Mac Cormac.

The following list of the 23 members of Council gives the date at which each member will retire; the date of the first election is given in every case in which the member has been elected to the Council more than once:—

Retire in 1909: Professor A. W. Mayo Robson, Leeds Infirmary (first elected 1893); Mr. W. Watson Cheyne, King's College Hospital; and Mr. Clement Lucas, Guy's Hospital.

Retire in 1908: Mr. Alfred Cooper (first elected 1892); Dr. J. Ward Cousins, Royal Portsmouth Hospital (first elected 1895); and Mr. A. Pearce Gould, Middlesex Hospital.

Retire in 1907: Mr. T. R. Jessop, Leeds General Infirmary (first elected 1891); and Mr. H. W. Page, St. Mary's Hospital.

Retire in 1906: Mr. F. Richardson Cross, Bristol Royal Infirmary; Mr. Henry Morris, Middlesex Hospital (first elected 1893); and Mr. John Langton, St. Bartholomew's Hospital (first elected 1890).

Retire in 1905: Mr. H. G. Howse, Guy's Hospital (first elected 1889); Mr. Edmund Owen, St. Mary's Hospital; and Mr. Rickman J. Godlee, University College Hospital.

Retire in 1904: Mr. Thomas Bryant, Guy's Hospital (first elected 1880); Mr. T. Pickering Pick, St. George's Hospital (first elected 1888); and Mr. J. Tweedy, University College Hospital (first elected 1892).

Retire in 1903: Mr. A. Willett, St. Bartholomew's Hospital (first elected 1887); Mr. H. T. Butlin, St. Bartholomew's Hospital; and Sir F. Treves, London Hospital.

Retire in 1902: Mr. Reginald Harrison (first elected 1888); Mr. Howard Marsh, St. Bartholomew's Hospital (first elected 1892); and Mr. J. Hardie, Royal Infirmary, Manchester.

We understand that Mr. Howard Marsh intends to offer himself for re-election but that Mr. Harrison and Mr. Hardie will not stand again.

At present there are eight candidates in addition to Mr. Howard Marsh. These are Mr. H. H. Clutton of St. Thomas's Hospital; Sir W. H. Bennett and Mr. C. T. Dent of St. George's Hospital; Mr. J. H. Morgan of Charing-cross Hospital; Mr. C. H. Golding-Bird of Guy's Hospital; Mr. C. Mansell Moullin of the London Hospital; Mr. J. Bland-Sutton of the Middlesex Hospital; and Mr. Jordan Lloyd of Birmingham.

There may be other candidates, as there is still time to apply. Applications must reach the secretary by Monday, June 9th.

ANNUAL MEETING OF FELLOWS.

The annual meeting of the Fellows will be held on Thursday, July 3rd, at 5.30 P.M., after the conclusion of the election to the Council. Any motions will be considered of which notice has been sent to the secretary not later than June 12th. Unfortunately, on the last five occasions on

which a meeting of the Fellows has been summoned no quorum has been obtained, probably chiefly because there have been no agenda.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bromsgrove Urban District.—Dr. H. Cameron Kidd continued during 1901 his energetic efforts with regard to the control of tuberculosis and a sample of milk from each dairy in the district was examined for the tubercle bacillus. But the specific bacillus was not detected microscopically, culturally, or by inoculation. Dr. Kidd is most surprised at this result as he finds it difficult to believe that none of the milch cattle were suffering from tuberculosis. His suspicions are probably well founded, but, as was shown in the investigations performed under the auspices of the first Royal Commission on Tuberculosis, it is extremely rare to detect the tubercle bacillus unless the udder itself is diseased, and possibly very different results might be obtained at Bromsgrove were the tuberculin test applied to the cattle, or were the milk only examined in cases where the udders were involved; indeed, perhaps the most useful measures in the present state of our knowledge are the frequent inspection of dairies and cowsheds, and the examination of the cow's udders in all cases.

Macclesfield Urban District.—Mr. J. Hedley Marsh deplores the altogether undue loss of life from infantile mortality in this borough, and the statistics for the last 12 years show that there is practically no diminution in that mortality. During 1899 and 1900 the rates were 190 per 1000 births for each year, and although during 1901 the rate fell to 180 Mr. Marsh attributes this improvement to the slackness of trade which enabled the mothers to stay at home and to nurse their offspring rather than to consign them to the care of a nurse whose main object is to keep the children quiet at any cost.

Exeter Urban District.—Dr. John Woodman reports that the intercepting sewers which are being constructed at Exeter are nearly completed and that nearly the whole of the sewage is being taken to the septic tanks at Belle Isle. At present the effluent from the septic tanks is apparently passing directly to the land, but when the filters are constructed such effluent will pass through the filters before passing over the land. The work which has already been performed has, we are told, very materially improved the state of the Exe.

Plympton St. Mary Rural District.—Mr. S. Noy Scott reports that the council of the district has had under its consideration the question of supporting the proposed Devon Sanatorium for Consumption by means of annual subscriptions. There was, however, some doubt as to the legality of the proposed contribution and the Local Government Board was consulted in the matter. Apparently no definite reply had been received at the date of writing the report, but we doubt if any objection is likely to be raised by the central authority, more particularly as the proposed sanatorium is referred to in the sense of an isolation hospital rather than as a place of cure. This distinction is legally, we believe, of some importance. In any circumstances Mr. Scott advises his council not to rest content with a negative reply, but to endeavour by joint action with other authorities similarly placed to alter the Whitehall decision.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 9118 births and 4710 deaths were registered during the week ending May 31st. The annual rate of mortality in these towns, which had been 17·3 and 16·6 per 1000 in the two preceding weeks, further declined last week to 16·5 per 1000. In London the death-rate was 16·6 per 1000, while it averaged 16·5 in the 75 other large towns. The lowest death-rates in these towns were 6·5 in Wallasey, 7·3 in Smethwick, 7·5 in Handsworth, 7·6 in Hornsey, 8·3 in Newport (Mon.), 9·0 in East Ham, and 9·9 in Willesden; the highest rates were 22·9 in Liverpool, 23·0 in Salford, 23·5 in Middlesbrough, 23·9 in Burnley, 24·2 in Rochdale, 24·6 in Burton-on-Trent, 25·7 in Oldham, and 25·9 in Barrow-in-Furness. The 4710 deaths in these towns included 505 which were referred to the principal zymotic diseases, against 516 and 531 in the two preceding weeks; of these 505 deaths 151 resulted from measles, 108 from whooping-cough, 59 from small-pox, 59 from scarlet fever, 54 from diphtheria, 45 from "fever" (principally enteric), and 29 from diarrhœa. No death from any of these diseases was registered last week in Croydon, Hornsey, Hastings, Portsmouth, Norwich, Handsworth, Aston Manor, Coventry, Grimsby, or Stockport; while the highest zymotic death-rates were recorded in Tottenham, Rochdale, Burnley, Barrow-in-Furness, Middlesbrough, Sunderland, and South Shields. The greatest proportional mortality from measles occurred in Bournemouth, Derby, Bury, Rochdale, Barrow-in-Furness, Stockton-on-Tees, and Sunderland; from scarlet fever in Burnley; from diphtheria in St. Helens and Middlesbrough; from whooping-cough in Birkenhead, Barrow-in-Furness, West Hartlepool, and South Shields; and from "fever" in Middlesbrough. 59 fatal cases of small-pox among persons belonging to these large towns were registered last week; of these 48 belonged to London, seven to West Ham, and four to Tottenham. The Metropolitan Asylums hospitals contained 1274 small-pox patients at the end of last week, against 1419, 1360, and 1344 at the end of the three preceding weeks; 251 new cases were admitted during the week, against 248, 233, and 307 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2212, 2207, and 2236 on the three preceding Saturdays, had further risen to 2266 on Saturday, May 31st; 319 new cases were admitted during the week, against 256, 270, and 280 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 231, 216, and 237 in the three preceding weeks, further rose last week to 261, and were 15 above the corrected average. The causes of 51, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Leicester, Nottingham, Manchester, Salford, Bradford, Newcastle, and 47 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Preston, Halifax, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·1, 19·4, and 20·3 per 1000 in the three preceding weeks, declined again to 19·3 per 1000 during the week ending May 31st, but showed an excess of 2·8 per 1000 over the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 15·2 in Leith and 15·9 in Greenock to 21·1 in Paisley and 25·0 in Perth. The 624 deaths in these towns included 22 which were referred to whooping-cough, 15 to diarrhœa, 13 to measles, four to diphtheria, two to "fever," and one to scarlet fever. In all 57 deaths resulted from these principal zymotic diseases last week, against 74 and 55 in the two preceding weeks. These 57 deaths were equal to an annual rate of 1·8 per 1000, which corresponded with the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 25 and 14 in the two preceding weeks, rose again last week to 22, of which 14 occurred in Glasgow, two in Edinburgh, two in Dundee, two in Aberdeen, and two in Leith. The deaths from diarrhœa, which had been 19 and 14 in the two preceding weeks, increased to 15 last week, and included six in Glasgow, three in Dundee, two in Edinburgh, and two in Paisley. The fatal cases of measles, which had been 21 and 16 in the two preceding weeks, further declined last week to 13, of which eight were registered in Glasgow and two in Edinburgh. The deaths from diphtheria, which had been three, four, and one in the three preceding weeks, rose again to four last week and included three in Edinburgh. The two fatal cases of "fever" showed a decline from recent weekly numbers and were both recorded in Glasgow. The

deaths referred to diseases of the respiratory organs in these towns, which had been 113, 114, and 156 in the three preceding weeks, declined again last week to 129, but were 22 above the number in the corresponding period of last year. The causes of 22, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·8 and 19·1 per 1000 in the two preceding weeks, rose again to 22·3 per 1000 during the week ending May 31st. During the past four weeks the death-rate has averaged 22·2 per 1000, the rates during the same period being 16·5 in London and 17·5 in Edinburgh. The 162 deaths of persons belonging to Dublin registered during the week under notice exceeded by 23 the number in the preceding week and included eight which were referred to the principal zymotic diseases, against 12, 13, and six in the three preceding weeks; of these, two resulted from measles, two from diphtheria, one from scarlet fever, one from whooping-cough, one from "fever," and one from diarrhœa. These eight deaths were equal to an annual rate of 1·1 per 1000, the zymotic death-rates during the same period being 2·3 in London and 1·5 in Edinburgh. The deaths from measles, which had been six, three, and two in the three preceding weeks, were again two last week. The mortality from "fever" and from diarrhœa also corresponded with that recorded in the preceding week, while that from scarlet fever showed a slight decline. The 162 deaths in Dublin last week included 33 of children under one year of age and 35 of persons aged upwards of 60 years; the deaths of infants were considerably in excess of the number recorded in the preceding week, while those of elderly persons showed a slight decline. Seven inquest cases and four deaths from violence were registered; and 63, or more than a third, of the deaths occurred in public institutions. The causes of seven, or more than 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

MAJOR C. G. WOODS retires from the service, receiving a gratuity. Dated June 4th, 1902.

INDIAN MEDICAL SERVICE.

Colonel A. Scott Reid, succeeds Surgeon-General Spencer, C.B., as Principal Medical Officer of the Punjab Command and Colonel W. McConaghey, Lucknow, takes Colonel A. Scott Reid's place as Inspector-General of Civil Hospitals in the Punjab.

IMPERIAL YEOMANRY (IN SOUTH AFRICA).

32nd Battalion: Robert John McClelland to be Medical Officer, with the temporary rank of Captain.

38th Battalion: Richard Murphy to be Medical Officer, with the temporary rank of Captain in the Army.

IMPERIAL YEOMANRY.

The undermentioned officers resign their commissions and receive new commissions subject to the provisions of the Militia and Yeomanry Act, 1901, each retaining his present rank and seniority, viz.:—

Duke of Lancaster's Own: Surgeon-Lieutenant-Colonel W. W. Wingate-Saul and Surgeon-Lieutenant L. G. S. Molloy.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain W. A. Dingle to be Surgeon-Major. Dated June 4th, 1902.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Cinque Ports; Surgeon-Captain J. W. T. Gilbert to be Surgeon-Major. 2nd Devonshire: Malcolm Bell Hay to be Surgeon-Lieutenant.

Rifle: 8th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Captain John Anderson resigns his commission and is appointed Captain. 1st Volunteer Battalion the Northumberland Fusiliers: Surgeon-Captain D. Stewart to be Surgeon-Major. 3rd (Morayshire) Volunteer Battalion, Seaforth Highlanders (Ross-shire Buffs, the Duke of Albany's): Surgeon-Lieutenant D. G. Campbell to be Surgeon-Captain. 1st Dumbartonshire: Surgeon-Lieutenant T. J. Burton to be Surgeon-Captain.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

1st London: Surgeon-Captain W. N. Evans, from the 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment), to be Surgeon-Captain and to command under paragraph 55A Volunteer Regulations.

NOTES FROM SOUTH AFRICA.

Civil Surgeon Abraham Ellenbogen was reported dangerously ill from typhlitis at Cape Town on June 1st, but after an operation on the following day he showed signs of recovery and is now progressing satisfactorily.

Civil Surgeon White is reported "distinctly better."

THE FUTURE EDUCATION AND TRAINING OF ARMY OFFICERS.

Among the recommendations and suggestions contained in the report of the Committee on Military Education there is one which will commend itself, if only on hygienic grounds, to the medical profession as highly desirable—namely, that a military cadet's studies would be, as far as possible, better carried out in the open air than in class-rooms. As far as their health and physical efficiency are concerned—and these count for even more in the army and navy than they do in other walks of life—we should say that army cadets cannot be too much in the open air and too little in lecture-rooms and class-rooms or engaged in sedentary occupations. It is difficult, no doubt, to discover some method of selecting candidates for our public services other than that of competitive examinations, but so far as these are written examinations they give a very inadequate idea of the capacity and fitness of a young fellow for an army life and campaigning work. They necessarily leave out of consideration altogether qualities of character, judgment, temper, and common-sense. Provided that a candidate comes up to the physical standard required by the regulations he may, if only properly crammed, succeed in taking a high place at a competitive examination and in supplanting other and much more desirable candidates. It cannot be said that the Boers are an intellectual or a cultured race, but as far as military tactics are concerned they have taught us and every other nation a great practical lesson. A competitive examination for our future officers should, as we have always held, be competitive all round, and superior physical qualifications and efficiency in school sports and games should count for something. It goes without saying that the possession of brains as well as bodies is a necessary qualification and that everybody is the better for being well educated generally and for being specially taught and trained for any and every walk in life. In the case of the more scientific branches of the army service—such as the Royal Engineers, the Royal Artillery, and the Royal Army Medical Corps—such special training is essential; and in the case of the Royal Military Academy at Woolwich it is satisfactory to find that the committee has no particular fault to find with the system and course pursued there. It is with the Royal Military College at Sandhurst that the committee appears to be so much dissatisfied and to have expressed its belief that the military training of young officers at that institution fails to develop knowledge or to promote efficiency. Mr. Brodrick having, as we may suppose, settled on a scheme for the future Royal Army Medical Corps, will have now to occupy his attention with army educational reform.

THE UNIFORM OF MEDICAL OFFICERS OF THE YEOMANRY AND VOLUNTEER CORPS.

We have recently received inquiries from correspondents with regard to the proper "kit" for medical officers of the yeomanry and volunteer corps. The following may therefore prove of use to many of our readers:—Medical officers of yeomanry wear the uniform of their respective corps (paragraph 352, Regulations for Yeomanry Cavalry, 1898). As regards volunteers: 1. Regimental medical officers of volunteer corps wear the uniform of their respective corps, with sword and pouch-belts as for officers of the Royal Army Medical Corps, silver being substituted for gold (paragraph 917, Volunteer Regulations). 2. Brigade-surgeon lieutenant-colonels may wear either their regimental uniform or the uniform of officers holding similar appointments in the Royal Army Medical Corps (paragraph 915, Volunteer Regulations). 3. Officers of the Royal Army Medical Corps (Volunteers) will wear the same uniform as officers of the Royal Army Medical Corps, silver being substituted for gold (paragraphs 903, 909 F., 910, 893, 894, and 899). 4. Officers

gazetted to volunteer infantry brigade bearer companies will wear the same uniform as Royal Army Medical Corps (Volunteers) except that the title of the company will appear on the helmet plate and shoulder strap (paragraph 851). Particulars of the uniform of yeomanry and volunteers do not appear in the Dress Regulations, but sealed patterns are kept in the department for "dress" in the War Office, where information on any point can be obtained.

THE ARMY RANK OF THE DIRECTOR-GENERAL OF THE ARMY MEDICAL SERVICE.

In connexion with the new system of army medical administration, by which, as we have previously announced, the Director-General is to occupy a more influential position in the councils of the War Office as the responsible representative of the Army Medical Department, it is satisfactory to learn that he will in future rank officially as a lieutenant-general and not as a major-general, as has hitherto been the case. It was no doubt deemed necessary to take this step in order to put the Director-General in his proper position in his official dealings with the headquarter staff and also to raise his military rank above that which is held by senior administrative officers serving under him. On these and other grounds the change is to be regarded as a desirable and wise one.

DEATHS IN THE SERVICES.

Civil Surgeon Birch, at St. Helena, on May 28th, from enteric fever.

Sir T. J. Gallwey has arrived at Simla and taken up his appointment as Surgeon-General of His Majesty's Forces and Principal Medical Officer of India.

Correspondence.

"Audi alteram partem."

ETHER *v.* CHLOROFORM.

To the Editors of THE LANCET.

SIRS,—Anent the correspondence in your columns as to the relative safety of ether and chloroform, will you allow me to recall that some years ago I pointed out in your journal[1] that the only really reliable data bearing on this subject were comprised in the admirable records of the administration of anæsthetics as tabulated in the St. Bartholomew's Hospital annual reports, which go back as far as 1875. As the subject still continues to attract in an increasing degree the attention of the profession I should like to set forth the results up to date, so that, so far as the occurrence of fatalities is concerned, there should in future be no ambiguity.

With regard to *chloroform*, the hospital records for the 16 years 1875–1890 show 13 deaths in 19,526 administrations. Since then the course of events has been as follows:—

Year.	Administrations.	Deaths.
1891	2,031	1
1892	1,887	1
1893	2,524	2
1894	2,350	2
1895	2,552	2
1896	2,436	3
1897	1,959	2
1898	2,648	3
1899	2,504	3
1900	2,561	1
Total	23,452	20

Thus during the 26 years 1875–1900 chloroform was administered 42,978 times, with 33 fatalities or 1 in 1300.

During the 16 years 1875–1890 *ether* was administered 21,332 times with only four deaths. In 12,941 of these cases ether was preceded by "gas," only one fatality belonging to this category; in the other 8391 cases ether alone was given and three deaths occurred. Since this period the ether record has been as follows:—

Year.	Ether alone.	Deaths.	Ether preceded by "gas."	Deaths.	Total.
1891	866	*Nil.*	130	*Nil.*	996
1892	824	,,	73	,,	897
1893	1420	,,	17	,,	1,437
1894	981	,,	701	,,	1,682
1895	242	,,	1,150	,,	1,392
1896	189	,,	1,427	,,	1,616
1897	201	,,	1,261	,,	1,462
1898	43	,,	1,872	,,	1,915
1899	17	,,	2,382	,,	2,399
1900	43	,,	2,106	,,	2,149
Total	4826	*Nil.*	11,119	*Nil.*	15,945

Thus, during the 26 years 1875–1900 ether was administered 37,277 times, with only four fatalities, or 1 in 9319. In 24,060 of these cases ether was preceded by "gas," and only one fatality occurred. In 13,217 cases ether alone was given and three fatalities occurred, or 1 in 4405.

It follows from the foregoing that ether is a very much safer anæsthetic than chloroform (in the proportion of 1300 to 9319); but much safer than either of these agents alone is ether preceded by "gas."

I am, Sirs, yours faithfully,

Clifton, Bristol, May 31st, 1902. W. ROGER WILLIAMS.

THE FEEBLE-MINDED AND CRIME.

To the Editors of THE LANCET.

SIRS,—Miss Dendy's paper on the above subject in THE LANCET of May 24th, 1902, p. 1460, is a valuable contribution towards the discussion of a social problem of great importance and magnitude. The views there expressed coincide very nearly with the conclusions which I have drawn from four years' work in connexion with the schools for the mentally defective under the London School Board. Important as the education of the feeble-minded is, it forms but a small, and by far the least difficult, part of the problem what to do with the feeble-minded. The work that is being done in this direction by public bodies and private individuals is, in my opinion, often largely thrown away because there exists no subsequent provision for the needs of a great number of those whom we attempt to educate.

In 1892 the London School Board first established special centres for the instruction of the mentally deficient and there are now nearly 2500 children on the rolls of these classes. Sufficient time has therefore elapsed to make it possible to form some opinion on what the future of children thus educated is likely to be. A certain number of the children passed as mentally deficient are passed out after a period of special training into the ordinary schools. These comprise largely in my experience cases of two types, the first neurotic excitable children below par mentally but without marked mental abnormality, the second stolid and apathetic children with sluggish brains but usually well nourished physically. Children of both these types do badly in the large classes of ordinary schools; they stagnate, or in the one case tend to nervous breakdown and in the other develop into hopeless dullards or truants. Under the individual training of the special classes they improve greatly and are usually able to return in time to the ordinary schools and rank henceforth as normal individuals. To these may be added another type common enough in the poorer districts—children stunted in body and mind from underfeeding and apparently incapable of learning anything. To the fact that in the defective centres, thanks to private charity, food is generally obtainable for really necessitous cases is due, I think, the striking improvement which often takes place in these cases. But the number of children returned to ordinary schools is small; I have not at present the exact statistics but they would hardly exceed 10 or 15 per cent. A few cases at the other

[1] THE LANCET, Feb. 8th, 1890, p. 317.

end of the scale are excluded as imbeciles and considered only fit for an asylum.

The large majority of the children admitted remain, however, in the special classes until they are passed out into the world. I think it may be said that all are improved and most are capable of doing work of some kind to a greater or less degree, but in very few cases can they compete with, or rank as, normal individuals. Past arrested development cannot be wholly compensated for; the adult remains in many respects a child, often with definite mental defects or at least with queer mental twists which produce exasperation in employers and despair in philanthropic friends. A certain proportion are incapable of work under ordinary conditions; if they obtain places they lose them at once. The majority, however, do obtain work. The boys seem to get employment readily and in certain kinds of mechanical work do well. But as they get older the difficulties of getting work increase; they can command boys' wages but do not become good enough to obtain those of men, and many sad histories come to the knowledge of the teachers in the schools they have left. The girls obtain factory work of an ill-paid kind or small places as domestic servants which they rarely retain long. If they do not marry, and often if they do, they usually become inmates from time to time of a workhouse maternity ward. Judging by what we often observe in the parents of the children with whom we have to deal, feeble-mindedness in either man or woman is no bar to matrimony, and indeed many of these defectives marry soon after they leave school with the probability, almost amounting to certainty, of transmitting a heritage of morbid mental or nervous conditions to their descendants.

As regards the question specially dealt with by Miss Dendy, the connexion of feeble-mindedness with crime, there is undoubtedly in every centre a group of cases approaching the type of the moral imbecile and characterised by instinctive tendencies to theft and other forms of immorality, but I do not think this is the case with the majority of the feeble-minded. When these drift into crime it is rather because they naturally sink into the lowest strata of society and are unduly amenable to the influence of others. The few homes which now exist for the care of the feeble-minded show that by the exercise of much patience and under careful supervision the inmates can do satisfactory work, lead happy lives, and make the homes at least partly self-supporting. A larger number of permanent homes with powers of forcible detention in suitable cases seems the only satisfactory method of dealing with the subject—of rescuing these unfortunates from the wretchedness to which so many are condemned and arresting the transmission of their defects to unborn generations. It is a subject which will have to be dealt with by the State before much progress can be made.

I am, Sirs, yours faithfully,

F. MAY DICKINSON BERRY, M.D., B.S. Lond.,
Assistant Medical Officer to the School Board for London.

Wimpole-street, W., May 27th, 1902.

WHAT IS A "CURE"?

To the Editors of THE LANCET.

SIRS,—I read the leading article "What is a Cure?" in THE LANCET of May 24th (p. 1478) with some interest, especially the passage relating to the scepticism that now obtains amongst a large and growing number of medical men as to whether our therapeutic measures do even help to bring about a cure. When I read on and came to the illustrations you gave of the fruits of the scientific study of medicine my interest deepened because you gave expression to the state of mind that is common not only among medical men but also among laymen. I do not, of course, deny that antitoxin in diphtheria and thyroid gland for myxœdema are brilliant triumphs of scientific discovery, but if these specific treatments are the only things that medicine can boast and the only future she awaits is for every other disease to have its like specific remedy, then where will be the need of the physician? The patient would in these enlightened days merely have to get his complaint diagnosed before repairing to a penny-in-the-slot machine to obtain his specific remedy and *o'est tout*. Indeed, in these days of tabloids and shallowness, we are a step or two in that direction already.

Now, Sirs, I contend that although without doubt our forefathers in medicine put too much faith in drugs, we are, as usual, going to the other extreme and are putting too little faith in them. Our want of faith is born frequently of as great ignorance as their belief and certainly of greater shallowness of thought.

The true physician in these days when surgery is being lauded to the skies—its successes how apparent, its failures how numerous and awful and frequently tragical, in private practice especially—is becoming either a *rara avis* or at any rate a timid one, for his voice is seldom "heard in the land" in vindication of his art. I contend that the skill of the physician in regard to treatment is seen not in giving such preparations as that of thyroid extract for myxœdema but in the skill which he displays in treating each case of departure from the normal rightly termed disease as a separate study and problem to be solved, by his drugs (perhaps using them as a sort of "liberating energy") calling into play the latent powers of nature or checking her too boisterous manifestations, it may be by displaying a "masterly inactivity" at certain stages and at the right time giving a suitable drug or drugs in the right combination in the right dose to assist, to coax, or to stimulate the vis medicatrix naturæ to lead on to health. There is no doubt that the commercial spirit, the rush of private practice together with low fees, club work with the resulting bodily exercise taking the place of mental, is driving many a practitioner into becoming anything but a thoughtful physician. In conclusion, if we had no other drugs than those handed down to us by our forefathers I do not think I shall be alone in saying that by them we could obtain (even as we are obtaining) glorious triumphs over disease. But if any man, either as a result of training or of mental gift, have not what has been called the "Mens Medica" then drugs and medical therapeutic remedies generally will be in his hands like the most beautiful colours in the hands of him who knows not how to paint.

I am, Sirs, yours faithfully,

May 30th, 1902. A. W. FULLER, M.B. Edin., &c.

THE CASE OF DR. W. T. LAW.

To the Editors of THE LANCET.

SIRS,—In this busy life so many things are constantly occurring, absorbing our attention, that we sometimes fail to appreciate the gravity of a charge which, according to a righteous judge and jury, ought not to have been brought against one of ourselves. Such is the case of Dr. W. T. Law who had to undergo a painful trial, being sued for £5000 by a former patient. Dr. Theodore Williams in his excellent speech at the King's Hall on May 9th said he never knew a patient who was suffering from spasmodic asthma who had so much done for her as was done by Dr. Law.

THE LANCET says in its issue of May 3rd: "Owing to the poverty of the plaintiff Dr. Law is saddled with the payment of heavy costs. At any moment anyone of us may find himself in a like position and we therefore hope that not only will the leaders of the medical profession subscribe their guineas but that the rank and file thereof will send their shillings. Sympathy is a great thing but, as the Apostle James remarked, 'If a brother or sister be naked, and destitute of daily food, and one of you say unto them, Depart in peace, be ye warmed and filled; notwithstanding ye give them not those things which are needful to the body; what doth it profit?' So let us show our sympathy in a practical way. And in particular we hope that the subscriptions will flow into the fund from the profession at large, for the matter is one of vital importance to them and they should recognise it."

Many of Dr. Law's professional brethren have shown their sympathy for him in a practical manner, for which he is extremely grateful. Some who have given to the fund already have promised to give more if others will not lend a helping hand. Some have been good enough to leave to me the amount that they should give. Several who have already given would have gladly given more if they were asked to do so. Others have written expressing the hope that more than the actual amount required will be forthcoming as a compensation for the indignity, worry, and loss of health which such a trial necessarily entails. In a case like this, affecting the honour, the prestige, and the liberty of the profession, it is desirable that many should show their interest in this unusual and exceptional case. Fortunately, Dr. Law is rich in the possession of sincere friendship, which many really wealthy men do not possess. At the painful trial his friends came to the rescue to give evidence in his favour. The grand service of Dr. Theodore Williams is well known and the testimony of

Sir Richard Douglas Powell, who although suffering from an attack of influenza came willingly to court, was no less valuable. If such sympathy can be displayed, ought not many to carry out the good advice of THE LANCET and join others who have been, and are, doing their best for one who did his best for his patient?

I leave the matter in the hands of my brethren, thanking the medical profession for what it has already done, and especially the medical press, ever jealous of maintaining its reputation of being a noble and generous profession.

I am, Sirs, yours faithfully,

RICHARD PARAMORE.

2, Gordon-square, W.C., June 3rd, 1902.

P.S.—I inclose a list of additional subscriptions.[1] Postal orders and cheques should be made payable to the Law Fund and crossed London and County Bank, Holborn, W.C.

THE SIMULATION OF ABDOMINAL BY THORACIC INFLAMMATION.

To the Editors of THE LANCET.

SIRS,—The reference to the paper of Mr. H. L. Barnard and Dr. M. H. Richardson on "The Simulation of Abdominal by Thoracic Inflammation" in THE LANCET of May 17th, p. 1414, reminds me of a case under my care some few years ago. I was called late in the evening to a man said to be suffering from acute abdominal pain. I was told by the wife that the pain had come on shortly after a light meal partaken of by her husband on returning from work, and both she and the patient had confidently diagnosed the case as one of poisoning by the margarine eaten at this meal. On examination I found the abdomen somewhat rigid and apparently markedly tender without any specially tender spots. Vomiting had occurred without any great relief. The temperature was normal and the pulse and respiration, though both increased, were not, I think, very significant of the condition afterwards diagnosed. I do not now remember exactly what increase they showed or what was the ratio, but I remember I proceeded to examine the chest rather to satisfy myself that I was not missing anything than because I expected to find the main cause of trouble there. The patient, who was evidently suffering acute pain—all, or nearly all, referred to the abdomen—considered this chest examination a work of supererogation which he was irritably inclined to resent. I was very glad, however, that I made it, as I found fairly well-marked signs of pneumothorax on the right side, which helped to clear up what promised to be a difficult and misleading case. This patient, I may add, recovered after a somewhat protracted illness, and I have no reason to suppose that there was any abdominal disease to account for the severe pain referred to that region. This condition of "referred pain" is a possibility which must be constantly borne in mind if one would avoid mistakes. Perhaps the most familiar instance of it is that of pain in the knee-joint due to hip-joint disease, but many other examples could be given which are frequently met with by every practitioner.

I am, Sirs, yours faithfully,

May 20th, 1902. R. WHITTINGTON.

SOUTH AFRICAN CIVIL SURGEONS' DINNER.

To the Editors of THE LANCET.

SIRS,—We shall be much obliged if you will allow us the use of your columns to request all civilian medical men who have served during the recent war in South Africa to do their best to be present at the above dinner at the Hotel Cecil, next Monday, at 7.30 P.M. Sir F. Treves will be in the chair, and the Director-General and Deputy Director-General of the Army Medical Service will be the principal guests. There will be two toasts, those of "The King" and of "The Imperial Forces," so as to leave ample time for the main object of the evening—the renewal of South African friendships and memories. Tickets, price 10*s.* 6*d.* each, may be purchased at the door, but we shall be glad to be informed beforehand of intending diners. Medals and orders may be worn.—We are, Sirs, yours faithfully,

FRANCIS E. FREMANTLE, C. GORDON WATSON, } Honorary Secretaries.

The College, St. Bartholomew's Hospital, E.C., June 4th, 1902.

[1] This list will be found on p. 1655.—ED. L.

THE ROYAL NAVY MEDICAL SERVICE AND THE ROYAL ARMY MEDICAL CORPS: A COMPARATIVE VIEW.

To the Editors of THE LANCET.

SIRS,—I have read with much interest your leading article and the new regulations for the Naval Medical Service, both published in THE LANCET of April 26th. As the parent of a prospective candidate for one of the services just about qualifying, the following points of difference between the new Army Warrant for the Royal Army Medical Corps and the new naval regulations struck me as being worthy of careful consideration.

1. *Article 349*, new Army Warrant, seconds newly-entered officers while holding appointment of house surgeon at a civil hospital and guarantees them the time so spent shall count towards promotion, pension, &c. The new naval regulations say, *if* a surgeon has held the appointment of house surgeon before entry he *may* receive earlier promotion to staff-surgeon.

2. *Article 352, Army*, gives officers the opportunity of gaining from three to 18 months' earlier promotion on passing their promotion examination with distinction. *Navy:* No such provision.

3. *Articles 356 and 366, Army:* Brevet promotion and brevet pay in addition to ordinary pay for a captain in the Royal Army Medical Corps. *Navy:* No similar provision.

4. *Article 368, Army:* Charge-pay for officers of whatever rank in charge of beds according to numbers. *Navy:* Charge-pay for inspector-generals only. Three out of a total of some 500 of all ranks.

5. Officers of the Royal Army Medical Corps may be granted full-pay sick leave up to one year with possibility of extension. *Navy:* Limited to three months, after which half-pay.

6. Officers of the Royal Army Medical Corps qualifying as specialists to receive 2*s.* 6*d.* a day in addition to ordinary pay. *Navy:* No such provision.

7. Staff surgeons employed in London to receive hospital allowances of £53 in addition to lodging allowances of £50, total £103 per annum. Major in the Royal Army Medical Corps of equivalent rank is to receive allowances totalling to £160 per annum.

Does the Admiralty really think that with all these substantial differences in favour of the Royal Army Medical Corps candidates of ability will ever be likely to enter the navy as surgeons, so long as they can be received into the Royal Army Medical Corps? I notice that the Admiralty is now advertising 30 commissions as surgeons for competition in June. Let it equate the conditions of its service to those of the Royal Army Medical Corps if it really desires candidates to respond.

I am, Sirs, yours faithfully,

May 17th, 1902. PARENT.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Epidemic.—Disgraceful State of the City of Ahmedabad.—The Religious Census of India.—The Prevention of Tuberculous Disease.

THE plague epidemic throughout India continues to show signs of declining. The total mortality for this week is 15,748 against 17,302 for the previous seven days. For the corresponding week of last year the deaths from plague amounted to only 3208. The figures for this week are smaller everywhere but the epidemic may be said to be raging fiercely at Karachi, Bombay, and Calcutta, and more especially throughout the affected districts of the Punjab. The figures are: Bombay city, 486 deaths; Bombay districts, 930; Karachi city, 106; Madras Presidency, 11; Calcutta, 441; Bengal districts, 473; United Provinces, 718; the Punjab, 12,334; Central Provinces, 96: Hyderabad State, 28; Kashmir, 106; and Berar, 18.

I have frequently pointed out the incompetency of certain municipalities in India for the sanitary administration of their towns. The city of Ahmedabad has become so bad that the Commissioner of the district has had to threaten to move the Government to interfere. The mortality has been increasing and is now 77 per 1000 without any epidemic to account for it. The city is overcrowded and dirty, and the

paths and roadways are very badly kept up. Accumulations of refuse abound, there is a want of surface drainage, the roads are very irregularly watered, and a great waste of pipe-water goes on. There is an open violation of by-laws regarding dangerous and offensive trades. Encroachments are permitted on the public roads, insanitary dwellings are very numerous, and nuisances abound. The registration of births and deaths is very defective and the taxes are remissly collected. This is a sufficiently strong indictment against the corporation and it is to be hoped that Government will take the administration of the city out of its hands.

It will probably interest your readers to hear the result of the census so far as the numerical distribution of the chief religions in India is concerned: Hindus, 207,075,277; Sikhs, 2,195,268; Jains, 1,334,148; Buddhists, 9,476,450; Parsees, 94,190; Mahomedans, 62,458,061; Christians, 2,923,241; Jews, 18,228.

The Bombay Municipality some time ago appointed a committee to frame measures for the prevention of tuberculous disease. The following is the report of this committee:—

The committee have carefully studied the resolutions passed at the general meeting of the British Congress on Tuberculosis on July 27th, 1901, and have considered the subject with special reference to local conditions and to the habits and prejudices of the varied populations of this city. With the conclusions of the Congress, as embodied in their resolutions, this committee are in full accord, and although it would not be possible in this country to give effect to all their recommendations, yet it seems to this committee that it is absolutely necessary to do something in the direction indicated by them to combat so fell a disease as phthisis which is year after year so increasingly conspicuous in the mortality returns of the city. In consultation with the health officer the committee have framed the following suggestions for the prevention of the disease, which they think are of a practical nature and not unsuited to the circumstances prevailing in the city:—

1. Voluntary notification by medical men to the health officer of every case of tuberculosis coming to their knowledge.
2. Facilities to be given for a bacteriological examination of sputum sent by medical men to a health officer to ascertain whether tubercle bacilli are present.
3. Instructions to be given how to disinfect a room in which a case of tuberculosis has occurred and died.
4. Instructions to be given how to disinfect sputum and to prevent the bacilli spreading the disease.
5. Disinfection and lime-washing of every infected house at municipal expense, where necessary in the opinion of the health officer, and systematic lime-washing of every common lodging-house twice a year at owner's expense.
6. Printed instructions in English and the vernaculars to the people, and instructions by male and female visitors as to the precautions necessary to prevent the spread of disease and notices posted as to spitting.
7. Prevention of overcrowding in houses, factories, and workshops.
8. Ventilation of houses, printing-offices, and workshops, and removal of dust from wool- and cotton-cleaning godowns and all trade processes causing pollution of air liable to affect the lungs and predispose to infection.
9. Inspection of milk- and meat-supplies and analysis of milk.

The committee are of opinion that at present action on the lines of these suggestions would be sufficient. The effect of these should be carefully watched and further measures can be decided on as they seem necessary.

It will be noticed that suggestion No. 1 is for voluntary, and not compulsory, notification of tuberculosis by medical men.

Suggestion No. 2 will involve expenditure, but the committee think it will be very useful and necessary expenditure.

With regard to suggestions Nos. 3, 4, and 5 disinfection and lime-washing may, so far as possible, be left to the people themselves, not so much on the ground of expense as on the ground of giving no cause for irritation, but rather than that it should not be done at all it may even be done at municipal expense. A discretion must therefore be given to the health officer to do it at municipal expense and by municipal agency whenever he thinks it necessary.

As to suggestion No. 6, the provision of sanatoria will be more a matter for the munificence of wealthy citizens whose attention should be drawn to the great good which institutions of the kind are calculated to do to the suffering poor. The committee hope that the public press, both English and vernacular, will help to keep the matter constantly before the public.

Continuous and persistent action on the lines indicated in the above suggestions will, the committee think, to some extent contribute to check the growing ravages of this disease, which appears to have taken so firm a hold of the many densely crowded sections of this city, such as Second Nagpada, Umerkhari, Chakla, Kamatipura, Kharo Talao, Mandvi, and Bhuleshwar. The committee, therefore, beg to recommend that the Commissioner be asked to take the necessary steps for giving effect to these suggestions, submitting proposals to the corporation in respect of such of them as involve additional expenditure.

D. E. WACHA. BHALCHANDRA KRISHNA.
R. P. DIMMOCK. K. E. DADACHANJI.
May 9th. N. N. KATRAK. D. A. D'MONTE.

The Plague Epidemic throughout India.

There is again this week a satisfactory decline in the mortality from plague throughout India. The decline is general but in Karachi the disease is raging with great intensity. There were 11,612 deaths in India from plague for the week ending May 10th, as against 15,748 for the previous seven days. For the corresponding week of 1901 there were only 2592 deaths. The chief districts affected are Bombay city with 391 deaths; Bombay districts, 583 deaths; Karachi, 122; Madras Presidency, 13; Calcutta, 280; Bengal districts, 337; United Provinces, 417; the Punjab, 9192; Mysore State, 70; and Kashmir, 212. In the two cities of Calcutta and Bombay the outbreaks are now rapidly declining. In neither city, however, has the outbreak attained the same intensity as did those of last year. In Calcutta the outbreak has been much more prolonged. There has been no further development in Eastern Bengal. It is satisfactory to find that the mortality in Bombay apart from plague is coming down to its normal level.

May 15th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Royal Infirmary.

IT appears as if the board of management of the Manchester Royal Infirmary were committed to rebuilding on the present site. At the meeting of the board on May 26th the chairman, Sir J. Forbes Adam, said that it would be remembered with regard to the rebuilding of the infirmary that the plans were passed subject to certain alterations and that they were referred back to be dealt with by the sub-committee. The sub-committee had been working with the architects and the plans, finally changed and with all the suggestions carried out, would be ready on June 17th. The Coronation festivities would cause some delay and it would probably be the third week of July before the trustees' meeting would be held. The trustees will probably be guided by the board as to the decision which they will come to. The plans are not yet made public and they cannot therefore be criticised, but the site is there for anyone to see. It comprises in all 19,580 square yards, or 22 yards more than four acres. On this restricted plot of ground buildings are to be erected giving superficial area and cubic space sufficient to accommodate 457 patients. In addition to the patients there is at the present time a household of more than 140 persons, and when the number of patients is nearly doubled the staff of officers, nurses, and servants must be largely increased, so that probably 700 people will be lodged in the infirmary. This is a high number per acre. The pungent winter fogs cause much suffering and injury to patients with diseases affecting respiration and discomfort to others. A little further from the centre, though there may be fog, it is less charged with acrid, irritating particles and gases. Immediately surrounded as the present wards are with streets and noisy traffic all day and a good part of the night there is no quiet freedom from jarring sounds.

City Electrical Generating Station.

A new generating station is in course of construction in Manchester. It is situated in Bradford, one of the industrial suburbs, and the first completed portion was opened by the Lord Mayor on May 27th. The site has an area of 8¼ acres—considerably more than twice that of the infirmary site—and when finished the station will be one of the largest of its kind in the world, providing accommodation for machinery of 70,000 horse power. The cost is expected to be at least £1,000,000. In accordance, therefore, with a law that seems almost to be universal it will probably be half as much again. The first municipal electrical works in Manchester were established in 1893 with machinery for generating 3000 horse power.

Small-pox.

Many cases of small-pox have recently been notified to the medical officer of health of Derbyshire. A navvy, lately working at Bamford and now living in Chapel-en-le-Frith, has been attacked, and it is feared that he may have communicated the disease to some members of the great colony of navvies now engaged on the preliminary work in connexion with the Derwent Valley Waterworks. In 1893 the authorities had an immense amount of trouble through small-pox spreading among the navvies employed on the Dore and Chinley Railway Works when Chapel-en-le-Frith was the seat of the epidemic. There are said to be 10 cases at Ilkeston, two at Ripley, and several at Chesterfield. Two cases at Derby are traceable to tramps, in regard to whom the authorities just now have to be especially vigilant. Manchester has

fortunately been free from small-pox since the present epidemic began.

Manchester Sewage.

Manchester has so long suffered from the sins of its forbears as regards its sewage and from the reproaches of the Mersey and Irwell Joint Committee that it is a consolation to receive the slightest commendation and encouragement. At the meeting of the committee on June 2nd Mr. Tatton, the chief inspector, reported that six acres of bacteria beds which were dealing with about 2,000,000 gallons of sewage daily had been completed and that a beginning had been made with 20 acres of beds to be similarly constructed. It was expected that by the end of the summer there would be temporary provision for the treatment of another 4,000,000 gallons by means of 13 acres of filters which would ultimately serve as storm-water filters. Mr. Tatton thought that fair progress had been made. The corporation has applied to the Local Government Board for powers to borrow nearly £400,000 to cover the cost of works at Flixton. It is to be granted an extension of time again for six months.

Prosecutions of Butter-dealers.

A wholesale butter-dealer in Manchester had to pay a fine of £20 the other day for selling the cheapest form of margarine as "creamery butter." It was certified to contain 80 per cent. of fat which was not butter and about 11 per cent. of water. In another case a dealer was fined 5s. and costs for selling butter which was certified to contain 20 per cent. of water.

The late R. Charnley Smith, M.D. St. And., D.Sc. Edin., J.P.

Dr. R. Charnley Smith died on May 30th, in his sixty-eighth year. For many years he had lived and worked in an industrial neighbourhood in Manchester; he was devoted to his profession but yet found time not only to cultivate his classical and literary tastes but to give his services to Manchester for several years as a member of the school board, a member of the city council, and a justice of the peace. The chairman of the magistrates on June 2nd paid a warm tribute to his memory.

June 3rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

University of Wales.

THE three constituent colleges of the University of Wales are in Aberystwith, Bangor, and Cardiff, and the offices of the registrar are at present at Aberystwith, the court of the University hitherto having been unable to decide where they should be permanently located, some members of the court advocating the claims of one collegiate town and others those of the remaining, while a few members were of opinion that the offices should not be in a collegiate town at all, but in some part of Wales centrally situated and readily accessible. An almost unanimous decision was arrived at on May 30th to erect suitable buildings at Cardiff, the corporation of which town offered a free site and a contribution of £6000 towards the building fund. The proposed site is in Cathays Park—an estate situated in the very centre of the town which has been acquired by the corporation from the Marquis of Bute and is to be used exclusively for public buildings. A new town hall and law courts are now being erected and other portions of the park are being rapidly allotted.—The annual extra-collegiate meeting of the University of Wales was held at Shrewsbury on May 30th under the presidency of the Deputy Chancellor (Dr. Isambard Owen). It was reported that the newly appointed Chancellor, the Prince of Wales, had sent a donation of £100 towards the Fellowship fund. Dr. Isambard Owen was unanimously re-elected senior deputy chancellor and Sir Lewis Morris junior deputy chancellor.

Cardiff Medical Society.

The annual meeting of the Cardiff Medical Society was held on May 29th, when Dr. Richard Prichard, medical officer of health of the Llandaff and Dinas Powis Rural District Council, was elected president for the next session. Dr. C. Theodore Williams, consulting physician to the Brompton Consumption Hospital, subsequently gave an address upon the Hygienic Treatment of Pulmonary Tuberculosis. Dr. Williams described with the aid of lantern slides and photographs various sanatoriums which he had visited in Germany and elsewhere, with especial reference to their situation, surroundings, arrangements for open-air treatment, &c. He advocated moderately heavy feeding but stopping short of the vomiting point, moderate and graduated exercise in certain cases, and all possible time spent in the open air, especially in the prone position but with the head and thorax sufficiently raised to permit of ready expectoration. He also laid great stress upon the necessity for having a strong man at the head of a sanatorium with sufficient influence and authority to enable him to see that his instructions were strictly carried out. In view of the keen interest which is being taken in the subject in South Wales at the present time Dr. Williams's lecture was most opportune and his account of the great good accomplished at the sanatoriums which he described ought to hasten on the erection of the proposed institution for Glamorganshire and Monmouthshire. In the evening the members of the society and their friends dined together.

Bristol Port Sanitary Authority: Report of the Medical Officers of Health.

Quite nine-tenths of the annual report of Dr. D. S. Davies and Mr. J. C. Heaven addressed to the Bristol Port Sanitary Authority is concerned with the question of the introduction of plague by rats. The key of plague prevention, in their opinion, is the extermination of rats, and although supervision of infected persons and articles must necessarily be maintained on ordinary lines of intelligent control they consider that there is not one tithe of the danger involved in the arrival of a plague patient at a non-infected port that there is in the arrival of a vessel with infected rats in the hold. It is recommended that all merchant vessels, and especially those engaged in the grain trade, should be periodically fumigated to destroy rats without introducing the question of infected ports at all. If the vessels arrived practically free from rats the risk of infection would be very materially lessened. It appears that in Hamburg for some years past rats have been destroyed on all incoming ships and after discharge any ship giving rise to suspicion is fumigated with sulphur by the authorities. The report gives a brief account of the outbreaks of plague at Glasgow in 1900 and in Liverpool, Hull, and Cardiff in the following year, and in more detail the experience of Bristol in January, 1901, when six dead rats, subsequently found to be infected with plague, were found on a ship 15 days out from Smyrna. A portion of the cargo of grain had already been discharged before the ship was certified as infected when the holds were twice subjected to sulphur fumigation and 226 rats were destroyed. The 117 men known to have had any connexion with the unloading of the vessel were kept under observation for 14 days from the last exposure to infection, two assistant medical officers being appointed to carry out this duty. No case of human plague resulted. Incorporated in the pages of the report is the resolution passed by the Associated Chambers of Commerce at the meeting held at Nottingham in 1901 and which contained a recommendation that the captains of vessels loaded at plague-infected ports should be ordered to destroy rats on board ship before loading cargo and should take precautions to prevent rats getting on board during the time that cargo is being loaded.

Vaccination Questions.

At the meeting of the Andover Board of Guardians held on May 23rd a proposal was made to publish in the list of paupers the names of those persons who had been re-vaccinated at the expense of the ratepayers. One of the guardians, however, stated that he had recently inquired from the Local Government Board upon the matter and was informed that this would be an illegal act, that the guardians would throw themselves open to action for injunctions and damages and would be surcharged the cost of publishing the lists. The Local Government Board also stated that persons who accepted free vaccination could not be classed as having received outdoor relief.—At the meeting of the Honiton (Devon) Board of Guardians held on May 24th it was stated that the public vaccinator for Sidmouth had recently vaccinated two children belonging to a tramp at his surgery instead of at the residence of the parent, which was a common lodging-house. The auditors of the Local Government Board had disallowed the fees. The public vaccinator stated that the reason he performed the

operation where he did was for cleanliness. The guardians decided to appeal against the surcharge.—At the meeting of the Okehampton (Devon) Board of Guardians held on May 24th it was reported that several residents whose names were mentioned at the previous meeting had sent the fees for revaccination. The guardians resolved that the names of all who had been revaccinated at the cost of the ratepayers should be read at their next meeting.—At a meeting of the Gower (Glamorganshire) Board of Guardians held on May 27th the chairman said that the medical officers in some cases vaccinated their own children at the cost of the ratepayers. The guardians decided that the list of persons who had been revaccinated should be scrutinised by a committee. —At a meeting of the St. Thomas's Board of Guardians (Exeter) held on May 30th it was decided to submit several questions for the consideration of the Local Government Board. Amongst these the guardians desired to know if a public vaccinator had a right to refuse to accept payment from persons revaccinated; when several hundreds of patients in lunatic asylums were revaccinated whether the public vaccinator was justified in refusing to accept a less sum than the full fee for revaccination at the home of the patient; and whether the full fee was payable in cases where the public vaccinator revaccinated several people living in one house, including the servants. It was mentioned that at Exmouth, out of 410 cases of revaccination 407 persons were operated upon at their own homes; and at Budleigh Salterton, out of 109 cases only nine persons had been revaccinated at the surgery.

June 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

THE annual report and financial statement of the Royal College of Surgeons in Ireland for the year ending April 5th, 1902, was submitted to a meeting of the Fellows held on May 31st. The President, Mr. Thomas Myles, in explaining the chief features of the account made some interesting remarks. The prospects of the College from a money point of view had changed for the better, the burden of debt caused by the amalgamation scheme having now completely disappeared. The Council had, moreover, during the past year made many purchases for the library and commenced the development of the museum by a special grant to the curator. Since the last report many of the Fellows and Licentiates have received honours and distinctions for their services in the South African war. Two had received the honour of C.B., five that of C.M.G., one that of C.I.E., three the D.S.O., and one the Victoria Cross.—The annual meeting for the election of the President and Council took place on June 2nd with the following result: Mr. Lambert Hepenstal Ormsby was elected President in succession to Mr. Thomas Myles, whose term of office has terminated, Mr. Arthur Chance was elected Vice-President, while a quite unusual number of changes took place in the *personnel* of the council. Mr. Myles has resumed his place on it and no less than five new members have been elected: Mr. Thomas Donnelly, Mr. F. T. Newell, Mr. J. D. McFeely, Mr. William Taylor, and Mr. H. W. Oulton.

The Irish Medical Association.

The annual general meeting of the Irish Medical Association was held on June 3rd in the hall of the Royal College of Surgeons, Stephen's-green. Dr. F. P. McLoughlin of Strangford, Vice-President, occupied the chair at the commencement of the proceedings, giving place later to Dr. J. Cranny, the newly elected President, who delivered an address.

Royal Medical Benevolent Fund Society of Ireland.

The annual meeting of the Royal Medical Benevolent Fund Society of Ireland was held on June 2nd in the hall of the Royal College of Physicians, Dr. Walter G. Smith being in the chair. Sir J. W. Moore read the annual report, the adoption of which was moved by Sir Philip Smyly and seconded by Sir Thornley Stoker. It appeared that £1330 had been given away in grants, while the receipts in subscriptions during the year only amounted to £450.

College of Science in Dublin.

On May 28th in a discussion in the House of Commons on the second reading of the Public Offices (Dublin) Bill as to whether the new College of Science should be built on the north or south side of the city of Dublin, a very strong protest was made by the north of Ireland members against the selection by the Government of the city of Dublin in which to build a college of science. Their view was that to spend £250,000 for a college in a place where, according to them, it would be little used would be a mistake. Such a college taught technical subjects and matters connected with manufactures of all sorts of articles in Ireland, and according to Mr. G. W. Wolff, M.P., one of the members for Belfast, should be placed in Belfast. At the Royal Commission on Technical Education in 1886 Dr. W. K. Sullivan, President of Queen's College, Cork, said: "The people of Dublin who have been crying out for technical education lately do not seem to know that they have had in their midst for the last 20 years one of the most complete polytechnic schools in Europe. If it has not done so much good as it might have done it is the fault of the people of Dublin." The Government is wise in trying to make the scheme of technical education in Ireland complete by establishing a college of science, but strong arguments are forthcoming for locating such a college where technical instruction is most in demand and where manufacturing industry is greatest. The county council of the city of Belfast has passed a resolution that facilities for all grades of technical instruction should be furnished for Belfast on a scale at least equal to that provided for Dublin.

Small-pox in Belfast.

I regret to report an increase in the number of small-pox cases in Belfast. The original cases were taken to the Union Hospital and it is said that 16 cases have occurred there and four in all have been admitted from the city. It is contrary to all modern ideas that a place like the Union Hospital, in the heart of the city and with the adjacent workhouse close at hand, should be the only hospital for cases of a disease like small-pox, which needs such thorough isolation and constant supervision. The Public Health Committee has arranged to erect a temporary hospital at Purdysburn at the cost of £1600 (it should have been done long ago) and it has appointed a sub-committee to take into consideration the erection of additional huts if necessary. It has also arranged to utilise the hospital at the Twin Islands for the contacts, where these people are to be sent overnight, bathed, disinfected, and vaccinated, and sent out, it is hoped, freed from infection. It would be wiser to keep them for a fortnight until the period of incubation had passed.

Belfast Union Workhouse Medical Expenditure.

During the week ended May 29th Dr. J. Smyth, medical inspector of the Local Government Board, has been conducting an inquiry in the board-room of the Belfast Union Workhouse relative to the expenditure on medicines and medical and surgical appliances in the Belfast workhouse and the several dispensary districts of the Belfast Union during the half year ended March 31st, 1902. A variety of evidence has been put forward and it will be some time before the result is known, but on the last day of the inquiry the inspector stated that he had taken an opportunity of seeing the Nurses' Home and had been surprised to find that one item, sugar, supplied to the nurses had been supplied in such enormous quantity that the supply in the week before had not been consumed and that two stones remained, and that the whole of the supply for the week which was passed at the date of his visit was still untouched and that pile after pile of articles unconsumed remained heaped upon the shelves. This he regarded as a serious question as regards the training of nurses in the Belfast Workhouse, as the nurses see in their own home an object lesson of what is undoubtedly extravagance. What he saw, the inspector stated, did not impress him either as good or economical administration. The head of the nurses' home said the work expected from her was excessive, as when she came first there were only 40 nurses, now there are 91. The inspector having spoken of the help which he had received from the clerk of the union, the master of the workhouse, and the medical officers, said the decision as based on the evidence would rest with the Local Government Board.

Cork Medical and Surgical Society.

The annual meeting of this society was held on May 28th. There was a very large attendance of members. The following officers were elected for the session 1902–03:—President, Dr. P. T. O'Sullivan; vice-president, Dr. J. Cotter; retiring

president, Dr. T. G. Atkins; honorary secretary, Dr. D. J. O'Connor; honorary treasurer, Dr. P. J. O'Brien; council, Dr. W. A. Cummins, Dr. C. Y. Pearson, Dr. N. H. Hobart, Dr. T. B. Moriarty, Dr. J. Giusani, Mr. E. Murphy, and Dr. H. R. Townsend. The financial statement showed a large balance to the credit of the society, the number of members being the largest on record.

June 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Chloroform in Heart Disease.

AT the meeting of the Academy of Medicine held on May 20th M. Huchard summed up the important discussion which he has been so ably conducting. It has led to the conclusion that administration of chloroform is admissible in cases of senile heart and also when the heart is the subject of valvular lesions. Cardiac intermittence and syncope during the administration of chloroform are not, in most instances, the effect of cardiac disease; even aortic insufficiency is not a cause of syncope. Among 100 deaths under chloroform there are not 10 in which the heart is at fault. Consequently cardiac disease, short of being in the stage of asystole, is not a contra-indication to the use of chloroform. Purity of the chloroform and skill and attention on the part of the anæsthetist have much to do with the obtaining of a successful result and the importance of the part taken by the administrator has induced M. Huchard to ask for the appointment of special anæsthetists. Extreme irritability in the chloroformed patient might be the means of giving rise to reflex shock and the method of administration selected is of very great consequence. M. Gosselin caused chloroform to be inhaled in small doses mixed with air. M. Richelot commenced the inhalation with an inhalation of bromide of ethyl. M. Laborde recommended the preliminary injection of morphine, atropine, and sparteine, or painting the mucous membrane of the upper respiratory tract with cocaine; morphine diminished nervous excitability and the patient became unconscious more easily, but atropine might appear to be dangerous. The superiority of ether over chloroform was not altogether proved. At all events ether was absolutely contra-indicated in pulmonary affections. Sédillot's aphorism might, in fact, be modified to the effect that the careful administration of chloroform, with attentive watching of the effects produced, was not dangerous for a patient who had been properly prepared. M. Laborde expressed the opinion that atropine was an important constituent in the prescription which he had given for the subcutaneous injections designed to prevent chloroform accidents,[1] for atropine was an antidote to morphine and had an influence on the motor action of the pneumogastric. M. Le Dentu, on the other hand, was apprehensive as to the possible effects of preventive injections in connexion with surgical shock, especially in operations of long duration. M. Championnière said that on trying the system recommended by M. Laborde he had been caused so much anxiety by the respiratory syncope which occurred that he would never repeat the attempt. To this M. Laborde replied that these trials had been made with solutions containing atropine in such a small quantity that its effects were inappreciable.

Treatment of Small-pox.

At the same meeting of the Academy of Medicine M. Landouzy read for M. Barbary a communication in which the author stated that he had treated eight cases of undoubted small-pox by isolation in a room in which only red light was permitted and by the adoption of the following aseptic and antiseptic measures. In the morning, in the course of the day, and in the evening the whole body was washed with a solution of corrosive sublimate of the strength of 1 in 200, a warm solution of the strength of 1 in 4000 being also vaporised twice a day over the face. The eyes, nose, and ears were also washed, gargles were used, and the mouth received attention. Morning and evening, a considerable time after the vaporisation, the face and other parts on which the eruption existed were painted with a mixture consisting of five grammes of salicylate of soda, 10 grammes of cherry-laurel water, and 10 grammes of alcohol. Copious enemata of a boiled watery solution of boric acid were given every morning. The medicines taken internally were a teaspoonful of *sirop phéniqué* twice a day and a *cachet* of 20 centigrammes of salol and 25 centigrammes of hydrobromate of quinine twice a day when the patient's temperature seemed to require it. Milk was given every two hours alternately with coffee or eau de Vichy (Célestins). Under this system of treatment adopted by M. Barbary the eight patients recovered rapidly; their temperature fell at an early stage, there was no suppuration, there were no complications, the disease ran a very rapid course, and when desquamation was completed there was no marking of the face.

[1] THE LANCET, May 24th, 1902, p. 1504.

Bilateral Ureteral Catheter.

At the same meeting of the Academy of Medicine M. Guyon presented, on behalf of M. Cathelin, a graduated bilateral ureteral catheter (*diviseur vésical*), by means of which the urine from each kidney could be collected separately in the bladder.

Centenary of the Internat.

The French hospital appointments which correspond approximately with those of house physician and house surgeon in England were originally created on Feb. 25th, 1802, and are known collectively as the Internat des Hôpitaux, those who perform the duties being called *internes*. Now that the *internat* has completed the hundredth year of its existence an opportunity for holding centenary celebrations presented itself, but the *fêtes* in question did not take place until May 24th and 25th, dates considerably later than the actual anniversary. It was at first intended that they should be held in April, and the committee of management had the agreeable expectation that the President of the Republic would take the chair, but the appointed date unfortunately coincided with a general election to the Chamber of Deputies, a period during which the Chief of the State and the Ministers make it a rule not to appear in public in an official capacity. The date was therefore altered to May 24th and 25th, but once more the hopes of the committee were disappointed, for M. Loubet was then in Russia. M. Waldeck-Rousseau consequently presided at the *fêtes*. The proceedings of the first day opened with a formal meeting in the great hall of the Trocadéro where official speeches were delivered. At night there was a grand banquet attended by 700 *internes* or former *internes*, many of whom had come specially to Paris from the country and from abroad, the entertainment winding up with a musical evening. On May 25th, at 10 A.M., a mass in memory of the *internes* who had met their death in the performance of their duty was celebrated in the Cathedral of Notre Dame by the Cardinal Archbishop of Paris in person. A small monument erected in the court of the Hôtel Dieu in memory of these victims to duty was unveiled at 2 P.M. on the same day. The monument, which had been executed by the chisel of the sculptor Denis Puech, consists of a bas-relief of moderate size placed against the wall of a corridor and represents an *interne* engaged in performing tracheotomy on a child suffering from diphtheria whose head is supported by a sister of charity. Notwithstanding the talent of the artist, the general effect of the design is lifeless, and is suggestive, not so much as a work of art, as of an illustration intended for a surgical text-book. In the evening there was a gala performance at the Opéra Comique Theatre in aid of the benevolent fund maintained by the *internes*. The cost of these celebrations was borne by the former *internes*, who opened a subscription list for the purpose and were presented with memorials of the proceedings in the form of a silver medal and a book recording deeds of heroism and devotion to duty performed by *internes*. The general idea underlying these anniversary *fêtes* was very touching and it is certain that the whole medical profession would have entered heartily into the spirit of them if the organisers had not rapidly lost sight of the original intention and allowed the proceedings to degenerate into a public glorification of what might be called the caste of the medical men who had in their time been *internes*. They are very proud of the title "*ancien interne*," and in the competition engendered by the overcrowding of the medical profession in the present day they try to flourish it before the general public in the hope of obtaining more recognition than their fellow-practitioners. The plain truth is that the *interne*, who exists only in France, is neither more nor less than a student admitted to act as assistant to the physician or surgeon in charge of a hospital ward and to attend to the patients in the absence of his principal. In each hospital there are several of them, who in turn one at a time about once a week remain on the

premises all night in readiness for emergencies. In the absence of the physician or surgeon and in cases of urgency the *interne* may perform some minor operations of which tracheotomy is one that formerly entailed some risks. These duties continue for four years, the remuneration is scanty, and the appointments are awarded in accordance with an annual competition, the candidates who come forward being five or six times as numerous as the vacancies, but as in all medical competitions at the present day favouritism is not always and entirely excluded. On the whole, it does not appear that the duties of an *interne* involve much more danger than falls to the lot of the students who are not *internes* and who every year lose some of their number by death from typhoid fever, diphtheria, tuberculosis, dissection wounds, &c. This being so, it was a little annoying to hear the *internes* lauded as if the good qualities which are the common property of the medical profession were concentrated in them and on that account the profession in general took no more than a languid interest in the *fêtes*, whilst the public celebration, presided over by a Cabinet Minister and occupying much space in the newspapers, seemed to betray a hankering after advertisement. This did not escape the notice of certain journals, and even of a portion of the non-medical press, the result being that while the ceremony at the Hôtel Dieu was in progress Professor Guyon, after having in the course of his speech mentioned the names of the *internes* who had died during their period of office, went on to say with graceful tact that it must not be forgotten that in the ranks of the medical men who did not belong to this particular class there were many who had greatly distinguished themselves and were not less imbued with the spirit of self sacrifice. A non-medical journal has even proposed that as a fitting pendant to the monument raised to the memory of the *internes* it would be desirable to have another monument commemorating all the medical men who had died victims to professional duty.

June 3rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Anæsthesin.

THE ester of para-amidobenzoic acid, which has received the name of "anæsthesin" and is prepared by Dr. Ritsert at the Höchster Farbwerke, is recommended as an efficacious local anæsthetic and as a substitute for orthoform. Experiments on rabbits have shown that it is not dangerous even in considerable doses but that doses which are very large and altogether in excess of those employed in practice will produce hæmoglobinuria. In some clinical observations published by Professor von Noorden in the *Berliner Klinische Wochenschrift* it is mentioned that anæsthesin is especially efficacious in cases of gastric irritation and that patients suffering from gastric ulcer may take from three to five decigrammes (from five to eight grains) 10 or 15 minutes before food to prevent vomiting. The largest daily dose as yet employed was 2·5 grammes (38 grains). Given in tabloids it relieved the cough in bronchitis; in laryngitis more benefit was derived from inhalations of a 10 per cent. solution than from any other local anæsthetic, cocaine included. In the form of suppositories it gave great relief in tenesmus and hæmorrhoids and also in tenesmus of the bladder. Ointments containing anæsthesin were very useful in pruritus and intertrigo, and it produced beneficial effects when applied to ulcers as a dry powder. Oberstabsarzt Dr. Dunbar has written in the *Deutsche Medicinische Wochenschrift* recommending the new remedy for use in surgical practice; he gave subcutaneous injections of a solution containing 0·25 part of hydrochlorate of anæsthesin in 100 parts of water and found that the anæsthesia thus produced was sufficient for the performance of a variety of operations. Anæsthesin may eventually be applicable in ophthalmic practice.

The "Practical Year" of Medical Study.

Recent legislation with respect to medical education provides that every student after having passed the State examination shall, previously to becoming qualified, spend a year in practical work at a hospital or other medical institution. The Government medical department has now issued regulations for the distribution of this class of students among the various hospitals, the proportion of students to patients being one student to each 25 patients in university hospitals, one student to each 37 patients in municipal and other public hospitals, one student to each 50 patients in private hospitals belonging to religious corporations, one student to each 60 patients in ophthalmic hospitals, one student to each 100 patients in sanatoriums for consumptive patients, and one student to each 120 patients in lunatic asylums. The managing bodies of hospitals desiring to receive students for the "practical year" have to make application to the Government department which will decide whether the hospital shall be permitted to do so, for it is expressly laid down in the regulations that only those hospitals are eligible where (1) the physicians and surgeons are competent and willing to instruct the students in the practical work of a medical man; and (2) where an opportunity is afforded of conducting chemical and microscopical investigations. Hospitals requiring a fee from the students will not be registered as places where the "practical year" may be passed. The number of vacancies at the eligible institutions offering to receive students for the "practical year" is said to be much in excess of the demand; students will therefore have no lack of opportunities of obtaining the requisite instruction. As regards the ultimate net advantages of this extension of the medical curriculum, a great deal will depend on the particular methods of instruction selected. If the young men have to spend their time in writing clinical reports of cases, as they do in some of the large hospitals, they are not likely to derive much real benefit from their "practical year."

June 2nd.

Obituary.

GEORGE FOWLER BODINGTON, M.D. DURH., M.D. GIESSEN, M.R.C.P. LOND., F.R.C.S. ENG.

WE greatly regret to have to record the death, in his seventy-third year, of Dr. George Fowler Bodington, which occurred recently in Paris, where he had made his home since his retirement from practice. The eldest son of Mr. George Bodington, surgeon, of Sutton Coldfield, whose work as a pioneer in the out-door treatment of tuberculosis is now well recognised, George Fowler Bodington was educated for the medical profession at Queen's College, Birmingham. After taking the Membership of the Royal College of Surgeons of England and holding the post of house surgeon at Queen's Hospital, Birmingham, he visited, as a ship's surgeon, Natal and India. He spent some time practising his profession in the back settlements of Pietermaritzburg, where his fees were paid in elephants' tusks, of which he brought away some hundreds of pounds' worth as the fruits of about eight months' work. At that time the elephant still roamed the forests of Natal; life there suited Bodington's hardy frame and adventurous disposition and perhaps he may have sometimes regretted that he did not stay where he would have been certain to make his mark. However, he returned to England, married, and settled in practice at Kenilworth in partnership with the late William Bodington, F.R.C.S., his uncle. In 1866 he moved to Middlesbrough-on-Tees and thence to Saltburn, where he remained until called to take the management of a prosperous private asylum established by his father at Sutton Coldfield, near Birmingham. Brought into contact with the vivid medical life of that great city, Dr. Bodington became an active member of its various medical societies and afterwards bore a leading part in establishing the Birmingham Medical Institute of which he was one of the early presidents; he was also president of the Birmingham and Midland Counties Branch of the British Medical Association in 1876. He was at this time full of activity, taking an immense interest in all that made for social and political progress and in particular he associated himself with the late Mr. Dalrymple in the movement to obtain legislation for the care and control of inebriates. But meanwhile events happened of considerable importance: he lost his first wife and married again, while the asylum owing to the falling in of the lease had to be transferred to Ashwood House, Kingswinford, in Staffordshire. Unfortunately, the second Mrs. Bodington never enjoyed good health at Kingswinford, and after several years of trial Dr. Bodington decided to sell the asylum and to seek elsewhere in a more congenial climate a home for his family. After wandering for a year or two he

settled eventually in British Columbia where he purchased a farm and carried on medical practice, but it is doubtful whether these ventures were altogether successful. However, the advance of civilisation in these western regions rendered a large lunatic asylum a necessity of the province and of this Dr. Bodington was appointed medical superintendent in 1895. His success in this work is well attested by the following extract from the report of his successor: "It was apparent that to bring about the required changes would entail an immense amount of work and Dr. Bodington felt constrained through the advance of years to relinquish the labour to younger hands and seek well-earned rest and retirement in the land of his birth surrounded by the members of his family and his friends. In this connexion I can truthfully testify that no greater general sorrow has been witnessed throughout the institution than that occasioned by the departure of the one who had taken the helm at a very trying time, and had safely piloted the hospital through some difficult passages, giving to it his best energy and utmost attention, though never in robust health, and having already arrived at that period of life when men hope to be able to forget labour and worry. Dr. Bodington's resignation was accepted by the Government, who voted him a retiring allowance for his faithful services, which terminated on Feb. 28th, after six years of most arduous toil, during the greater part of which he was alone in the charge of the institution."

Dr. Bodington came to England last year to visit his relatives and to renew acquaintance with old friends. He eventually settled in Paris, where his eldest son, Mr. Oliver Bodington, occupies an important position in Anglo-American legal and commercial circles. His death occurred after a very short illness but his state of health had not been satisfactory for some time past. Dr. Bodington was a man of magnificent physique and fine presence, a delightful companion, and an enthusiastic man of letters. His second wife died some years ago, but he has left a large family of children settled in Europe and in Canada.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Louis Secretan, Professor of Internal Medicine in the University of Lausanne, at the age of 49 years.—Dr. Nicolas Kalindéro, Professor of Clinical Medicine in Bukarest.—Dr. Theodor von Kezmarssky, Professor of Midwifery and Gynæcology in the University of Budapest. To him is largely due the great amelioration which has taken place in the conditions under which labour has now for many years been treated both in hospital and in private practice in Hungary. He was only 60 years of age.—Dr. Clymer, formerly Professor of the Diseases of the Nervous System in the Albany Medical College.—Dr. W. D. Middleton, Professor of Surgery in the Iowa State University.—Dr. Franz Scholtz of the General Hospital, Vienna, at the age of 82 years.—Dr. Guido von Török, a well-known Austrian military surgeon who was Billroth's assistant from 1877 to 1880. His age was 52 years.—Dr. Karl Skrzeczka who succeeded Casper in the chair of Forensic Medicine in Berlin. He was 69 years of age and had lived in retirement for the last four years.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and having conformed to the by-laws have been admitted Members of the College:—

John Acomb, Yorkshire College and General Infirmary, Leeds; Charles Umpherston Aitchison, Oxford University and London Hospital; Evett Gordon Allport, Melbourne University and Guy's Hospital; Edward Whyte Aliment and Albert Maurice Amsler, St. Bartholomew's Hospital; James Vere Arkle, University of New Zealand and St. Thomas's Hospital; John Hilton Ashton, Owens College and Royal Infirmary, Manchester and Edinburgh; Sidney Marshall Banham, University College Hospital; Joseph Barnicot and Guy Douglas Barton, B.A. Camb., Cambridge University and St. Thomas's Hospital; Eric Bayley, Charing Cross Hospital; John Menlove Bennion, Cambridge University and St. Bartholomew's Hospital; William Benton, L.S.A. Lond., Charing Cross Hospital and London Hospital; Edward Bigg, B.A. Camb., Cambridge University and Guy's Hospital; Thomas Henry Bishop, Edinburgh and Durham University; Charles Edgar Blackstone, Middlesex Hospital; Arthur de Visme Blathwayt and Frank Elliott Bolton, University College Hospital; Frederick John Borrie, University of New Zealand and Middlesex Hospital; Leonard Bousfield, B.A. Camb., and Christopher Victor Bulstrode, B.A. Camb., Cambridge University and London Hospital; Gerald Lantabery Bunting, Oxford University and Westminster Hospital; Philip Burnett, M.D., C.M. McGill, McGill University, Montreal, and St. Mary's Hospital; Harry Hendy Butcher and John Corbin, St. Bartholomew's Hospital; Marcus Woolf Cohen, B.A. Lond., Guy's Hospital; Horace Arthur Cutler, B.A. Camb., and Hugh Davies-Colley, B.A. Camb., Cambridge University and Guy's Hospital; Oswald Joseph Stanley Damian, St. George's Hospital; Augustus De Morgan, St. Mary's Hospital; Archibald Donald, M.B., M.S., D.P.H., Glasgow University and King's College, Hospital; Hugh Reginald Dutton, Middlesex Hospital; John Evans, Guy's Hospital; Edgar Leonard Farncombe, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Tom Bower Fawley, University College, Sheffield, Yorkshire College, and General Infirmary, Leeds, and Guy's Hospital; Wilfrid Stephen Fox, M.A. Camb., Cambridge University and St. George's Hospital; Charles Edward Gaitskell, Guy's Hospital; Laurence Unthank Geraty, St. Bartholomew's Hospital and University Colleges, Dublin and Sheffield; Thomas Gibson, St. Thomas's Hospital; Douglas Gray, Charing Cross Hospital; William Harrington Gray, London Hospital; George Walters Greene, B.A. Camb., Cambridge University and London Hospital; Richard Griffith, Cambridge University and London Hospital; William Hackney, M.D., C.M. Trinity, Toronto, London, Ontario, and University College Hospital; Alexander Ritchie Hall, M.D., C.M. McGill, McGill University, Montreal, and University College Hospital; Langton Fuller Hanbury, St. Thomas's Hospital; John Joseph Hanley, Cork, Massachusetts, and Boston Universities; George Francis Innes Harkness, University College Hospital; William Henry Harwood-Yarred, B.Sc. Lond., St. Thomas's Hospital; James Gilkinson Higgins, St. Mungo's College, Glasgow; William George Hopkins, St. Mary's Hospital; Norris Norman Allen Houghton, Guy's Hospital; Joseph Louis Howard, M.D. Cooper Medical College, Vienna and St. Mary's Hospital; Trevor Howell, University College, Cardiff, and St. Bartholomew's Hospital; Goldwin William Howland, B.A., M.B. Toronto; Adrian Russell Fortesque Hubbard, Charing Cross Hospital; George Frederick Humphreys and Percy Douglas Hunter, Guy's Hospital; Osburne Ievers, St. Mary's Hospital; John Jenkins, University College, Cardiff, and University College Hospital; Charles Percival Johns, B.A., M.B. Queen's University, Kingston, Canada, and University College Hospital; Edward Alfred Jones, M.B. Toronto, University College and Middlesex Hospital; Guy Hannah Kirby, Mason College, Queens, and General Hospitals, Birmingham; Robert Hammersby Lee, King's College Hospital; Aaron Levy, B.A., M.D., C.M. McGill, McGill University, Montreal, and St. Bartholomew's Hospital; Alfred Edward Arthur Loosely, B.A. Oxon., Oxford University and St. Thomas's Hospital; George Edward Loveday, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; George Harvey Low, St. Bartholomew's Hospital; John Knowles Lund, Mason College, Queen's and General Hospitals, Birmingham, and Owens College and Royal Infirmary, Manchester; James McBryde, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; Frederick William Marlow, M.D., C.M. Trinity, Toronto, and University College Hospital; George Maw, University College Hospital; Arthur George Hay Michel, Charing Cross Hospital; William Percival Miles, St. Bartholomew's Hospital; Frank Morgan, Westminster Hospital; Ratanji Maucherji Nanji, L.M.S. Bombay, Grant Medical College, Bombay; Arthur Charles Nash, Guy's Hosptial; Courtney Llewellyn Nedwill, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; James Hardie Neil, M.B., Ch.B., New Zealand; Arthur Carr Osburn, Guy's Hospital; Leslie Johnston Paton, B.A., B.C., M.B. Camb., Glasgow and Cambridge Universities and St. Mary's Hospital; Drury Pennington, B.A. Camb., Cambridge University and St. George's Hospital; George Pereira, M.B., Ch.B. Edinburgh, Edinburgh University and St. Bartholomew's Hospital; Eric McLeod Perkins, London Hospital; William Pettigrew, University College Hospital and University College, Sheffield; David Jonathan Phillips, M.D., C.M. Canada, McGill University, Montreal, and London Hospital; Lawrence Pick, St. George's Hospital; Arthur Frederick Pilkington, St. Mary's Hospital; Charles James Pinching, B.A. Oxon., Oxford University and Guy's Hospital; Aubrey Keatinge Halliday Pollock, St. Bartholomew's Hospital; Robert Maurice Ranking, Cambridge University and St. Bartholomew's Hospital; Hugh George Rashleigh, Guy's Hospital; George Augustus Keppel Hart Reed, St. George's Hospital; Owen William Richards, M.A. Oxon., Oxford University and Guy's Hospital; James Riddell, M.B., B.S. Melb., Melbourne University and King's College Hospital; Henry Naunton Robson, St. Thomas's Hospital; Cecil William Rowntree, L.S.A. Lond., Middlesex Hospital; Arthur Reginald Schofield, London Hospital; Charles Newton Sears, St. Thomas's Hospital; Walter Moray Shand, M.B., Ch.B. New Zealand, St. Bartholomew's and Charing Cross Hospitals; Henry Finch Skrimshire, Cambridge University and Charing Cross Hospital; Herbert James Slade, St. Bartholomew's Hospital; Frank Wybourne Smith, Guy's Hospital; Robert Howard Newby Smith, London Hospital; James Arthur Smyth, University College Hospital; Robert Archibald Slater Sunderland, St. Bartholomew's Hospital; James Templeton, St. Mary's Hospital; William Edward James Tuohy, Guy's Hospital; Godfrey de Bec Turtle, Cambridge University, King's College Hospital, and Royal Infirmary, Newcastle; Harold Upcott, St. Thomas's Hospital; Arthur Beaumont Waller and George Stafford Ward, London Hospital; Noël Everard Waterfield, St. Bartholomew's Hospital; Eugene Christopher Whitehead, Westminster Hospital; Owen Thomas Williams, B.Sc. Lond., University College, Liverpool; Reginald Cameron Wilmot, St. Bartholomew's Hospital; Herbert Pattison Wiltshire, B.A. Camb., Cambridge University and Guy's Hospital; William Wingate Wingate-Saul, M.A. Camb., Cambridge University and St. Bartholomew's Hospital; Guy Theodore Wrench, Guy's Hospital, John Henry Wroughton, St. Bartholomew's Hospital; and Bransby Yule, University College Hospital.

UNIVERSITY OF LONDON.—At the M.B. examination in May the following candidates were successful:—

First Division.—Walter Fedde Fedden, St. George's Hospital, and Percival George Harvey, St. Bartholomew's Hospital.

Second Division.—Oswald Lacy Addison, University College; Frederick Cecil Edgar Atkinson, St. George's Hospital; Thomas Aubrey, University College, Bristol, and St. Bartholomew's Hospital; Edward Walter Bain, London Hospital; Hugh Barber, Owens College and Guy's Hospital; Percy John Cammidge, St. Bartholomew's Hospital; Ernest Philip Chennells, University College; Edward Murray Clarke, London Hospital; Hector Alfred Colwell, St. Bartholomew's Hospital; Agnes Emma Dunnett and Eric Evans, London (Royal Free Hospital) School of Medicine for Women; John Evans, Guy's Hospital; Edward Fow Fisher, London Hospital; David Forsyth, Guy's Hospital; John Gay French, St. Mary's Hospital; Frederick Goulburn Gibson, Guy's Hospital; Archibald Douglas Hamilton, University College, Liverpool, and St. Thomas's Hospital; Arthur Charles Haslam, St. Thomas's Hospital; Stanley Hodgson and Norris Norman A. Houghton, Guy's Hospital; Francis Musgrave Howell, St. Bartholomew's Hospital; William Henry Jones, London Hospital; Frederick Samuel Longmead and William Sydney Page, St. Mary's Hospital; Rees Phillips, Middlesex Hospital; Herbert Dean Pollard, London Hospital; David Thomas Price, St. Mary's Hospital and Bristol Medical School; Morgan James Rees, Guy's Hospital; Philip Savill, University College; Emily Gertrude Stuart, London (Royal Free Hospital) School of Medicine for Women; George Orissa Taylor, London Hospital; Vere Godsalve Ward, St. Bartholomew's Hospital; and Lucy Wellburn, London (Royal Free Hospital) School of Medicine for Women.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only, and is not final until the reports of the examiners shall have been confirmed by the Senate.

UNIVERSITY OF CAMBRIDGE.—Mr. F. G. Hopkins, Emmanuel College, is to be appointed Reader in Chemical Physiology. Emmanuel College has generously offered to contribute £100 a year to his stipend.—Among the recipients of honorary degrees on June 10th will be Principal Rücker of the University of London; Sir Harry Johnston, discoverer of the okapi; and Dr. Bell, director of the Canadian Geological Survey.—On May 26th the following were admitted to medical degrees:—

Bachelor of Medicine.—H. T. Hodgkin, King's; A. de W. Snowden, Christ's; and F. B. Wood, Downing.

Bachelor of Surgery.—H. T. Hodgkin, F. D. Nicholson, and G. E. St.C. Stockwell, King's; C. V. Bulstrode, Trinity; G. E. Loveday, B. Spearman, and R. Spearman, Caius; A. de W. Snowden, Christ's; H. O. Butler, Emmanuel; and W. W. Jeudwine, Selwyn.

Mr. L. Doncaster has been appointed Assistant Superintendent of the Zoological Museum. The examiners for the Final M.B. examinations are Dr. Isambard Owen, Dr. L. Humphry, and Professor W. S. Greenfield in Medicine; Dr. M. Handfield-Jones and Dr. G. E. Herman in Midwifery; and Mr. C. T. Dent, Mr. Ward, and Mr. E. Owen in Surgery.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At a meeting of the Fellows held on June 2nd for the election of President, Vice-President, honorary secretary, and council for the ensuing year the following were elected:—President: Lambert H. Ormsby. Vice-President: Arthur Chance. Honorary Secretary: Sir Charles Cameron. Council: Sir Philip Smyly, H. R. Swanzy, E. H. Bennett, Sir Charles Cameron, Austin Meldon, J. B. Story, Sir W. Thomson, C. B. Ball, T. Myles, J. Lentaigne, R. D. Purefoy, H. G. Sherlock, R. B. McCausland, R. H. Woods, T. Donnelly, F. T. P. Newell, J. D. McFeely, W. Taylor, and H. W. Oulton.

ABERDEEN UNIVERSITY MEDICAL SOCIETY.—A meeting of this society was held on May 30th when Dr. Angus Fraser delivered an address, entitled, "A Retrospection." He reviewed in detail the great advances in the various branches of science made during the last 100 years. Commencing with the discovery of such elements as oxygen, nitrogen, and hydrogen about the end of the eighteenth century, he pointed out the great original inventions made in most branches of science by Englishmen. Reviewing the science of medicine in particular, he showed that it was chiefly in this country that the original discoveries were made which had advanced so much the science of medicine, although they might have been worked out in detail by other nations. In support of this he instanced the discovery of vaccination by Jenner, of ether by Morton, and of chloroform by Simpson. With regard to the works of Virchow and Koch on Cellular Pathology and Bacteriology respectively, he suggested that theirs was not work of an original kind, but that they elaborated the fundamental principles laid by Goodsir of Edinburgh and Villemont and Pasteur of France. In concluding, Dr. Fraser referred to the great advance of Japan, not only in the commercial but also in the scientific world. A hearty vote of thanks was accorded to Dr. Fraser for his interesting and illustrative paper.

ROYAL INSTITUTION.—An extra Friday evening discourse will be delivered at the Royal Institution on June 13th at 9 o'clock, by Mr. G. Marconi, on the Progress of Electric Space Telegraphy.

COTTAGE HOSPITAL FOR TREDEGAR.—At a meeting held on May 30th it was decided to erect a cottage hospital for Tredegar, upon a site of land given by Lord Tredegar, at a cost of £2000.

DONATIONS AND BEQUESTS.—Mr. and Mrs. Pearson, Johnston Lodge, Laurencekirk, have given £600 to the Royal Hospital for Sick Children, Aberdeen, for the endowment of a cot to be named the "Pearson Cot."

CARDIFF SEAMEN'S HOSPITAL.—At a recent meeting of the building committee of this institution it was reported that the sum received up to the present towards the new hospital amounted to £13,806. The committee decided to invite the Marquis of Bute to lay the memorial stone of the new building in August next.

BRISTOL LUNATIC ASYLUM.—The Bristol Lunatic Asylum, where there is accommodation for 950 patients, has now been entirely lighted by electricity for a whole year and the cost during that period was £99 less than was that for gas during the previous year.

BEQUEST FOR A NURSES' HOME.—The late Miss Mayzod Rowland, who died at Neath on May 25th, has left the sum of £2000 to build a home for the Queen's nurses at Neath or to be invested and the proceeds applied to the general purposes of the Neath Nursing Association. Miss Rowland also bequeathed £200 to the Porthcawl Rest and a like sum to the Children's Convalescent Home at Tollington Park, London.

DEATH OF A MEDICAL MAN AFTER CYCLING.—An inquest was held at Langdon Hills, Essex, on May 30th, on the body of Mr. J. S. E. Cotman, M.R.C.P., L.R.C.S. Edin., of The Minories, London, E.C., who was found on the greensward by the roadside at Langdon Hills on the evening of May 27th. The deceased gentleman, who was 54 years of age, went for a short bicycle ride to Langdon Hills, and was found lying by the roadside. He complained of a pain in the chest and asked the distance to the nearest railway-station. He died later. The cause of death was heart failure and exhaustion from excessive heat.

NOTTINGHAMSHIRE SANATORIUM FOR CONSUMPTIVES.—The Nottinghamshire Sanatorium for the Treatment of Consumption, on Ratcher-hill, Sherwood Forest, near Mansfield, was formally opened on May 30th by the Duke of Portland, in the presence of a large and representative gathering. The sanatorium is intended for the treatment of patients with limited means, and although it has been opened free from debt the income for its maintenance has to be provided. It is estimated that the expenses will amount to 30s. a week, or £75 a year, per patient, which with only 14 patients means £1000 a year, or for 20 patients £1500 a year. The committee hopes that there will be a large number of annual subscribers of one guinea (or more) who will thus become members of the association and form its governing body.

ROBBERY AT A CORONER'S HOUSE.—At West London Police-court on June 2nd Thomas King, aged 27 years, described as a furniture dealer, and Richard William Greenwood, aged 24 years, a labourer, were charged with being concerned in stealing an Indian necklet, a pair of gold sleeve-links, two gold bracelets, and other articles worth £30 from the house of Dr. F. J. Waldo, Holland-park, W. Dr. Waldo stated that on Sunday afternoon he was sitting in the drawing-room with his wife when he heard shouts and the cook cried out, "There's a man in the house." He immediately ran out of the room and pursued King through the grounds at the back of the house and while jumping the garden-wall close to the man's heels he caught his foot in the ivy and fell. He jumped to his feet and continued the chase. Finally he caught the prisoner in Lansdowne-road where King made a show of resistance, but a constable arrived and took the man into custody. Police-constable Ingate said

that while he was engaged with King Greenwood came behind him, dealt him a couple of blows, and threw him to the ground, saying "That's my pal." The whole of the stolen property was found in the coat-pocket of King. Mr. Lane, the magistrate, ordered a remand.

PRESENTATION TO A MEDICAL PRACTITIONER.—MR. R. U. Wallace, M.B. Lond., M.R.C.S. Eng., has on his return to practice in Hackney received from his friends an illuminated address and a cheque for £700.

TROWBRIDGE COTTAGE HOSPITAL.—The Trowbridge (Wilts) Cottage Hospital has recently received a bequest of £1000 from the late Sir W. R. Brown, a legacy of £500 from the late Mr. T. E. Exley, and a gift of £500 from Dr. T. Jarvis Bennett.

RABIES.—In August, 1900, a boy and a man residing in the Llandilofawr district of Carmarthenshire were bitten by a rabid dog and were under treatment at the Pasteur Institute for nearly three weeks. Neither patient appears to have suffered any ill-effects until May 27th when the man, who was 66 years of age, was taken suddenly ill and developed symptoms of rabies, dying in great agony on the following day.

THE LATE DR. EDWARD LONG FOX.—At a meeting held on May 29th it was decided to establish a memorial to the late Dr. E. Long Fox who had practised in Bristol for 43 years and who died on March 28th. Included in the memorial will be a tablet to be placed in the cathedral, an annual lecture at University College, Bristol, upon some subject connected with medical science and to be called "the Long Fox Lecture," and the partial supporting of a medical missionary student at University College, Bristol.

LITERARY INTELLIGENCE.—The following books will shortly be published by Messrs. J. and A. Churchill: the seventh edition of the Diseases of Children, by Dr. J. F. Goodhart and Dr. G. F. Still, with about 100 pages more than before and the page enlarged to the library form; the second edition of a Manual of Bacteriology, by Dr. R. T. Hewlett, Professor of Pathology and Bacteriology in King's College, London, much enlarged and with many new illustrations; the fourth edition of Volume II. of Fagge's Textbook of Medicine, under the editorship as hitherto of Dr. P. H. Pye-Smith, F.R.S.; the second series of Clinical Lectures on Surgical Subjects, by Mr. Christopher Heath; a new work by Dr. A. T. Schofield entitled, "The Force of Mind or the Mental Factor in Medicine"; and the fourth edition of the Schott Methods of the Treatment of Chronic Diseases of the Heart, by Dr. W. Bezly Thorne.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MAY 28TH.

State of the Sewers at Westminster.

MR. JOHN HUTTON asked the First Commissioner of Works whether he had had his attention called to the condition of the sewers in the neighbourhood of the Houses of Parliament and whether he could make any statement upon the subject.—MR. AKERS DOUGLAS replied: No complaints have reached me lately. Some years ago attention was called to the unsatisfactory state of the sewers in the neighbourhood and a committee of the House of Commons reported on the need for improvements. The County Council considered, on representations from the Office of Works, methods for ventilating the metropolitan main sewer and the Council communicated with the vestry as to altering the district sewers under the charge of that body. I think that very little has been actually done but some of the inlet ventilators in the street were altered. My honourable friend is no doubt aware that, as a result of an inquiry by a committee in 1886, the drains of the Houses of Parliament were completely cut off from all risks from the public sewers.

The Hanworth Small-pox Hospital.

Sir FREDERICK DIXON-HARTLAND asked the President of the Local Government Board whether he had yet received the report of the two officers of the department whom he instructed to visit the site of the proposed small-pox hospital at Hanworth, Middlesex; and whether he was now prepared to take steps to prevent the danger to London which its erection above the intakes of three of the water companies might cause.—Mr. WALTER LONG replied: Two officers of the department have visited the site of the hospital referred to and have made a report to me on the subject. I understand that there is no fear of pollution of the sources of supply of the water companies provided that the cesspools on the site are emptied regularly and their contents are not allowed to overflow or soak away into the soil. I may add that, as I am advised, there is no scientific evidence to prove that small-pox infection can be conveyed by water, though no doubt any such risk should, if possible, be avoided.

FRIDAY, MAY 30TH.

Lamp Accidents.

Mr. RITCHIE, in reply to a question by Mr. H. C. RICHARDS, said that he was considering whether it might not be possible to institute some inquiry with special reference to the facts of the recent cases of death by burning.

Home Office Affairs: Lead Poisoning, &c.

At this sitting of the House there was a long debate on the affairs of the Home Office and Mr. RITCHIE in the course of his reply said that with regard to laundries he was not by any means satisfied with the present condition of the law. Last year the Government did its best to amend the law and the House was familiar with the circumstances in which the Government was compelled to abandon its proposals. But he was not indifferent to the subject and he took immediate steps to communicate with the institution laundries and to obtain opinions from them which might afford guidance. A great many replies had been received and, on the whole, they were favourable to an amendment of the law. He had also been in negotiation with some of those who were most difficult upon the last occasion when legislation was attempted and he was hopeful that the Government might be able to propose soon—though, of course, not this session—some legislation which, while not giving all that might be desired, would go a long way in the right direction. He hoped that it would be possible to deal satisfactorily with the question of hours, the fencing of machinery, and sanitation, and if that were done it would be a great advance. Every one of the institutions with which he had communicated not only did not object to supervision in matters of that kind but many of them expressed a strong desire for supervision. In these matters no religious difficulty arose at all. He felt strongly on this subject and he should not rest content until the law had been placed on a more satisfactory footing. No doubt there had been a very marked improvement in respect of lead poisoning and it was clear that the operation of the law was leading to very satisfactory results. The number of cases had been reduced from 457 a few years ago to 165 in 1901. Exemptions had been asked for by 33 manufacturers and he believed that applications were now coming in from 60 additional manufacturers, so that at present there were nearly 100 manufacturers who had seen their way to do something in connexion with this subject for the sake of some other advantages which were offered to them. In the fruit-preserving trade the department had issued an order dealing with the lifting of heavy weights by young persons. He would seize every opportunity to give effect to the undertaking which he had given in connexion with this question. Hon. members should remember that the subject could not be dealt with by one order dealing with every trade, but the department had taken advantage of every fresh order in connexion with trades to impose conditions with regard to weight-carrying. As to phosphorus-necrosis he thought the right hon. baronet the Member for the Forest of Dean (Sir Charles Dilke) would not deny that what he called the revival of this disease was very small. The number of cases had diminished in a remarkable way. In 1898 there were 21 cases; in 1899, eight; in 1900, three; and in 1901, four. What the right hon. baronet called "a revival" must be the increase from three to four. His hon. friend the Member for Stoke (Mr. Coghill) had asked him whether he would direct an inquiry into the general state of trade in the Potteries. He did not think that the Home Office was the department to direct an inquiry, if an inquiry were to be made, but he had heard now for the first time that the state of trade in the Potteries was so bad as to call for any exceptional treatment. If his hon. friend would communicate with the Board of Trade he thought that he would find that they had much more information on the matter than they had at the Home Office. With regard to the subject of experiments on living animals which had been raised by several members Mr. RITCHIE said that as to the argument that animals suffered intense pain after recovery from the anæsthetic he was assured that that was not so, because life was destroyed before return of consciousness. It might become necessary to appoint additional inspectors, but it would be absolutely impossible to ensure that an inspector should be present at all operations, for that would require an army of inspectors. No certificate was given except under every precaution that the operation would be conducted by a properly-trained person for an adequate scientific object. All possible means were taken to avoid causing animals unnecessary pain; the inspectors were most humane men and so generally were the operators. He did not know that there had been any convictions for cruelty under the Act.

MONDAY, JUNE 2ND.

Experiments on Living Animals.

Mr. BANBURY asked the Home Secretary whether he would state how many of the 9598 animals experimented upon under certificates A and A + E and A + F had been under the personal observation of the inspectors, and in the case of animals experimented upon under these certificates which had not been under the personal observation of the inspectors what was the guarantee, besides the word of the operator himself, that the provisions of the certificates had been obeyed; whether he would state at how many of the 1176 experiments on living animals in 1901 done under licence alone an inspector was present, and what was the guarantee, other than the word of the operator himself, that the provisions of the licence as to anæsthesia were obeyed in the cases where an inspector was not present; also at how many of the experiments done under B and B + EE, numbering together 699, was an inspector present; and when experiments were performed under these certificates without the presence of an inspector what was the guarantee, besides the word of the operator himself, that the provisions of the certificates and licences as to anæsthesia were obeyed; and whether he would state in how many experiments done under certificates A, A + E, and A + F pain ensued before the main result of the experiment had been attained and who was the authority that decided whether or not pain did ensue.—Mr. RITCHIE replied: Very few of the experiments under the certificates indicated or under the licences alone have been witnessed by an inspector, but a very large number of the animals experimented upon have been seen and carefully examined by the inspectors and in no case have they found that an animal has been unnecessarily kept alive

in pain. The licensee is, of course, responsible for carrying out the conditions of his licence and certificates and the additional guarantees are that the inspectors can judge whether the licensee is in the habit of obeying the conditions by the number which they see and in which they find the animals in a proper state and by the fact that whenever they find an experiment going on the provisions of the law with regard to anæsthesia are obeyed. Further guarantees lie in the character of the persons to whom licences are granted and the eminent persons who recommend them and in the fact that such experiments must be performed in registered places which are under the control of responsible authorities, and that all applications are carefully scrutinised before registration is granted.

In the course of the sitting Mr. BANBURY brought in a Bill to amend the Cruelty to Animals Act, 1876.

Cancerous Cattle.

Sir JAMES JOICEY asked the Home Secretary whether his attention had been called to a recent case at the Leicester County Court, before His Honour Judge Wightman, when a statement was made by one of the meat inspectors of the Leicester Corporation that in cases where cancer occurred in an animal (presumably local) he only condemned the part of the animal affected as being unfit for human food but passed the remaining part of the carcase; if so, whether, considering the increase of cancer in the United Kingdom, he would make regulations, or ask the local authorities to do so, to ensure in such cases the condemnation of the whole carcasses of animals in any way affected by cancer.—Mr. WALTER LONG, replying to the question, said: I have seen a short newspaper report of the case referred to. I am advised that the course adopted would appear to have been sufficient, and it does not seem to me that there is any need to ask local authorities to take action of the kind suggested. I have no power to make regulations on the subject.

TUESDAY, JUNE 3RD.

The Holding of Inquests.

Sir JOHN LENG asked the Attorney-General whether his attention had been called to the holding of an inquest on a man, aged 70 years, who died lately in his own house at Mapplewell after being ill for more than three years suffering from cancer; if he would explain why an inquest was held in this case; and whether he would promote legislation to prevent inquests being necessary in such cases.—Mr. RITCHIE replied: I find on inquiry that an inquest was held in this case to explain the reason of the deceased man's having a dislocation of the hip, complicated by fracture of the thigh-bone, and that it was only after very careful attention to the medical evidence at the inquest that the jury were enabled to return a verdict to the effect that the death was purely natural, and that the injuries to the bones were the result of the cancerous growth and were not due, as had appeared possible, to a fall or external violence of some kind. Under these circumstances it seems impossible to say that the coroner did not properly exercise the discretion given him by the Act.

Medical Provision in Orkney.

Mr. CATHCART WASON asked the Lord Advocate if his attention had been called to the fact that a petition from the island of North Ronaldshay, praying that telegraphic communication should be established with the mainland, was refused consideration by the Post Office owing to the extensive nature of the work; and whether, seeing that the population of the island was over 400, that there was no medical officer there, and that medical or surgical attendance could only be procured after considerable delay, he would consult with the Northern Lighthouse Commission, the Scotch Fishery Board, and the Congested Districts Board as to the establishment of communication by heliograph, semaphore, or pigeon post.—The LORD ADVOCATE, in reply, said that the Secretary for Scotland was not prepared to initiate action in the direction indicated by the honourable Member. He would, however, be happy to consider any scheme for facilitating communication that might be laid before him by those interested.

Vaccination Exemptions.

Mr. CORBIE GRANT asked the Home Secretary whether he was aware that Mr. E. Dew made application to the Spelthorne Sessions, Staines, on Monday, May 5th, for an exemption certificate on the ground of conscientious objection to vaccination; that, four of the magistrates being in favour of granting the certificate and four against, it was refused; and, seeing that under the circumstances two of the magistrates who were in favour of granting the certificate could have signed the certificate, whether he would state what action he proposed to take.—Mr. RITCHIE replied: I am advised that where a majority of the justices sitting in petty sessions are not in favour of granting a certificate of exemption from vaccination it would not be proper for any minority to grant the certificate unless the other justices present abstained from adjudicating in the case. There is no action which I can take in the matter.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BEAN, HAROLD KNOWLES, M.D., C.M., B.Sc. Edin., has been appointed Government Medical Officer at Wallsend, New South Wales.

BROOK, T. S., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the Petersfield Union.

BURRITT, E. H., M.B. Syd., has been appointed a Member of the District Board for Old-age Pensions at Dubbo, New South Wales.

CLAREMONT, CLAUDE C., M.D., has been appointed Physician to the Royal Portsmouth and Gosport Hospital, vice J. Watson, appointed Consulting Physician.

COLE, ROBERT HODGSON, M.B. Durh., has been appointed a Coroner for Victoria.

COLMER, PTOLEMY AUGUSTUS, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., has been appointed Medical Officer and Public Vaccinator to No. 2 District, Yeovil Union.

D'OMBRAIN, ERNEST ARTHUR, M.B. Melb., has been appointed Public Vaccinator for the South-Western District, Victoria.

ERCOLE, QUINTO, M.D., Ch.D. Bologna, has been appointed Government Medical Officer and Vaccinator at White Cliffs, New South Wales.

ELVINS, HENRY, F. H., M.B. Melb., has been appointed Medical Officer of Health, *pro tem.*, for the Borough of Clunes, Victoria.

EYRE, J. W. H., M.D., has been appointed Bacteriologist to Guy's Hospital.

FLOYER, F. A., B.A., M.B. Cantab., M.R.C.S. Eng., L.S.A. Lond., Civil Surgeon attached to Connaught Hospital, Aldershot, has been appointed a Government Medical Officer in the British Central African Protectorate, to proceed to Zomba.

FREEMANTLE, FRANCIS E., M.B., B.Ch. Oxon., has been appointed Medical Officer of Health to the Herts County Council.

GREEN, REGINALD, M.D., D.Hy. Dunelm, has been appointed Medical Officer of Health and Medical Officer to Infectious Hospitals for the Kings Norton and Northfield Urban Council.

HOLCROFT, W. F., has been appointed Medical Officer for the North Molton and Molland Districts by the South Molton (Devon) Board of Guardians.

LAMB, WILLIAM, M.D., C.M. Edin., M.R.C.P. Lond., has been appointed Honorary Surgeon to the Birmingham and Midland Ear and Throat Hospital, vice Dr. Charles Warden, resigned.

LYNCH, PETER, L.R.C.P. Edin., has been appointed Public Vaccinator for the Metropolitan District, Victoria.

MCGEE, WILLIAM, L.K.Q.C.P., has been appointed Officer of Health for the Shire of Phillip Island and Woolamai, Victoria.

MACQUARIE, CHARLES NICOL, L.R.C.P. Edin., has been appointed Medical Officer of Health for the Shire of Omeo, Victoria, and Public Vaccinator for the North-Eastern District, Victoria.

MAROMET, ARCHIBALD, M.B., Ch.B. Aberd., has been appointed House Surgeon to the Paddington Green Children's Hospital.

MORRIS, F. H., M.D. St. And., has been re-appointed Medical Officer of Health to the Wellingborough Rural District Council.

OWEN, FREDERICK JAMES, M.D. Melb., has been appointed Public Vaccinator for Needham District, Victoria (Acting), during the absence of Dr. Ealer.

REID, MATTHEW ALEXANDER, M.B. Edin., has been appointed Acting Officer of Health for the City of Richmond, Victoria, during the absence on leave of Mr. Branson.

SYMONS, WILLIAM HENRY, M.D. Brux., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Oxon. and Durh., has been re-appointed Medical Officer of Health for Bath.

TIGHE, JOHN M., L.R.C.P. Edin., has been appointed Medical Officer of Health for the Shire of Yarrawonga, Victoria, during absence on leave of Dr. O'Sullivan.

WILSON, GEOFFREY R., B.C. Cantab., has been appointed House Physician to the Paddington Green Children's Hospital.

WORTHINGTON, SIDNEY, M.D. Lond., F.R.C.S. Eng., has been appointed Honorary Physician to the Chesterfield and North Derbyshire Hospital and Factory Surgeon for the Chesterfield District.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT LUNACY BOARD.—Medical Superintendent. Salary £500, with house, coal, gas, &c.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House Surgeon. Salary £160 per annum, with apartments, coals, gas, washing, and attendance.

BRISTOL CITY LUNATIC ASYLUM.—Medical Assistant, unmarried. Salary £140 per annum, increasing to £160, with apartments, board, and washing.

CENTRAL LONDON SICK ASYLUM at Cleveland-street or Hendon.—First Assistant Medical Officer. Salary £120 per annum, with board and residence at Hendon.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—House Surgeon (non-resident). Honorarium at rate of 40 guineas a year.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. A salary, with board, residence, and laundry.

FISHERTON ASYLUM, Salisbury.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

FORBES LEANCHOIL HOSPITAL, Morayshire.—Medical Officer. Salary £80 per annum.

GLASGOW, ST. MUNGO'S COLLEGE, MEDICAL FACULTY.—Notman Chair of Physiology.

GREAT NORTHERN CENTRAL HOSPITAL.—Pathologist and Curator. Salary 50 guineas per annum.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing. Also Junior Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

ISLE OF MAN LUNATIC ASYLUM.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, coals, gas, and attendance.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar. Salary £100 per annum. Also Assistant Surgeon.
LONDON TEMPERANCE HOSPITAL, N.W.—Assistant Resident Medical Officer for six months. Honorarium at rate of 50 guineas per annum, with board, residence, and washing.
NORFOLK AND NORWICH HOSPITAL.—Second Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Assistant Physician.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.
PARISH OF FULHAM INFIRMARY, St. Dunstan's-road, Hammersmith, W.—Second Assistant Medical Officer for six months. Salary £80 per annum, with board, apartments, and washing. Also Locum Tenens for ten weeks, with remuneration at rate of £4 4s. a week, with board, apartments, attendance, &c.
ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Lecturer on Dental Anatomy.
ROYAL EAR HOSPITAL, Soho.—House Surgeon. Small honorarium.
ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES, Northampton.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £200, with board, apartments, and washing.
ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Resident Medical Officer. Salary £150 per annum, with apartments, attendance, coal, and light.
SALOP AND MONTGOMERY COUNTIES LUNATIC ASYLUM, Bicton Heath, near Shrewsbury.—Medical Superintendent. Salary £850 per annum, with unfurnished house, fuel, light, &c.
SOMERSET AND BATH ASYLUM, Cotford, Taunton.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, and washing.
STAFFORDSHIRE COUNTY ASYLUM, Stafford.—Junior Assistant Medical Officer, unmarried. Salary £150, rising to £200, with apartments, board, &c.
STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—House Surgeon. Salary £120 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.
SUSSEX COUNTY HOSPITAL.—Second House Surgeon and Anæsthetist. Salary £70 per annum, with board and residence.
WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £160 a year, rising to £190, with board, residence, attendance, and washing.

Births, Marriages, and Deaths.

BIRTHS.

CARLIER.—On May 28th, at Elvetham-road, Edgbaston, Birmingham, the wife of Professor E. Wace Carlier, M.D., F.R.S. Edin., of a son.
COPEMAN.—On June 1st, 1902, at 57, Radcliffe-gardens, S.W., the wife of Sydney Monckton Copeman, M.D., F.R.C.P., of a daughter.
HEWETSON.—On May 27th, at Edmund-street, Birmingham, the wife of John T. Hewetson, M.D. Edin., F.R.C.S Eng., of a son.
MURRAY.—On June 2nd, at Ravenscourt-park-crescent, Llandrindod Wells, the wife of John Murray, M.B., C.M. Glasg., of a son.
REISSMANN.—On April 29th, at Knutsford, Glenelg, South Australia, the wife of Charles Reissmann, M.A., M.B., M.R.C.P., of a daughter.
REYNOLDS.—On June 4th, at Highcroft, Shepherd's Hill, Highgate, N., the wife of Austin Edward Reynolds, M.R.C.S. Eng., of a son.
SMITH.—On May 30th, at 229, High-street, Watford, the wife of G. Francis Smith, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

MARRIAGES.

CODD—LEESON.—On June 3rd, at Sutton Coldfield Wesleyan Church, by Rev. John Codd (father of the bridegroom), assisted by Rev. W. R. Dent and Rev. R. S. Armsby, B.A., John Alfred Codd, M.D., B.Sc. Lond., of Wolverhampton, Honorary Assistant Physician, Wolverhampton General Hospital, to Jennie, daughter of Mrs. Leeson of Sutton Coldfield and the late J. H. Leeson of Moseley, Birmingham.
HENDERSON—BRAMWELL.—On June 3rd, at St. Cuthbert's Church, Colinton, Midlothian, by the Very Rev. the Dean of Edinburgh, J. Hossell Henderson, Advocate, youngest son of the late George Henderson of Leghorn, Italy, and nephew of the late W. J. Ford, 17, Grosvenor-crescent, Edinburgh, to Mary, daughter of Byrom Bramwell, M.D., F.R.C.P.E., 23, Drumsheugh-gardens, Edinburgh.
LOW—ASHBY.—On May 31st, at St. Mary's, Staines, by the Rev. S. T. Wood, Vicar, assisted by the Rev. John Salway, cousin of the bride, Vincent Warren Low, M.D., B.S., F.R.C.S., of 27, Queen Anne-street, W., eldest son of Edward Low, Esq., of Staines, to Mabel, eldest daughter of John Ashby, Esq., J.P., of Staines.

DEATHS.

COTMAN.—On May 27th, suddenly, John Sell Edmund Cotman, M.R.C.P., L.R.C.S. Edin., L.S.A.
DOWN.—On May 28th, at 6, Ellison-terrace, Streatham-common, George Down, M.D., M.R.C.S., L.S.A., late of Kensington and formerly of Kennington, aged 83 years.
GIBBON.—On June 3rd, at Abbey Hill, Bury St. Edmunds, Laura, the dearly loved wife of the Rev. Canon Gibbon, aged 77 years.
RODGERS.—On May 27th, at Corporation-road, Cardiff, Florence Emily, the beloved wife of J. H. Rodgers, L.R.C.P., L.R.C.S. Edin.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

POLLUTED WELLS.

To the Editors of THE LANCET.

SIRS,—I shall be glad to know through THE LANCET what jurisdiction a medical officer of health has over a well which is polluted and in his opinion the origin of an outbreak of enteric fever in a dwelling-house? 1. Must the medical officer of health have the water analysed before condemning and closing the well? 2. Have the rural district council "power" to prevent the inmates of the house and neighbours using the water for drinking purposes *without first having the analyst's report on the water?* 3. In case of urgency has the medical officer of health discretionary powers to close a polluted water-supply which in his opinion is the immediate cause of an outbreak of enteric fever without first notifying to the rural district council of his intention, where the district council meet only once a month, or must he conform to Section 70, Public Health Act, 1875?

I am, Sirs, yours faithfully,
June 1st, 1902. M. O. H.

*** 1. If our correspondent cannot persuade the owner or occupier to close the well he must put the facts before the clerk to the rural district council with a view to having a closing order applied for. The magistrate *may*—but it does not follow that he shall—order the water to be analysed or he may at once order the well to be closed. 2. The rural district council has no power other than through a magistrate's order. 3. Our correspondent should proceed as suggested under answer No. 1, and, if necessary, immediately inform the clerk who is then responsible for taking the consequent legal measures. In a matter of urgency the clerk would call a special meeting of the rural district council or sanitary committee.—ED. L.

THE LOCUM-TENENT AND COTTAGE HOSPITAL APPOINTMENTS.

PAX writes: "There is a small cottage hospital in a country town where the patients are treated gratuitously by the medical men in the neighbourhood elected by the governors. In the event of one of these gentlemen being absent from home would his locum-tenent take his place as a matter of course without consent of the governors?" We think that it would be the best course for the locum-tenent to take the place of his principal automatically. Presumably the principal takes care, for the sake of his patients and himself, to be replaced by a competent man. The governors could hardly be expected to go into the *pros* and *cons* of a man's suitability to hold a temporary post at the hospital.

THE LAW FUND.

TRUSTEES: THE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, AND THE MASTER OF THE SOCIETY OF APOTHECARIES OF LONDON.

THE following additional subscriptions have been received by Dr. Paramore, 2, Gordon-square, W.C.:—

	£	s.	d.		£	s.	d.
Dr. Philip Frank	2	2	0	Dr. Surtees Sumner ...	0	10	6
Mr. J. A. Peters	0	5	0	Dr. Stacey Wilson	0	10	6
Dr. James Bremner ...	0	10	6	Dr. Thomas Marshall ...	0	10	6
An Ounce of Help is Worth a Ton of Pity...	1	1	0	Mr. Ambrose Greet ...	0	10	6
				Dr. William Travers ...	1	1	0

SAM BROWNE BELTS FOR VOLUNTEER MEDICAL OFFICERS.

To the Editors of THE LANCET.

SIRS,—Volunteer medical officers will find the authority for wearing them (1) Volunteer Regulations, paragraph 917, p. 180, "As for officers of Royal Army Corps of corresponding rank." (2) Dress Regulations, appendix viii., p. 110, "Worn by officers of all branches of the service."

I am, Sirs, yours faithfully,
P. B. GILES, Brigade-Surgeon Lieutenant-Colonel, S.M.O.I., V.A.S.I.

Bletchley, June 3rd, 1902.

A CASE FOR DIAGNOSIS.

IN an "Account of the Author, from the Hand of a Surviving Sister," which is prefixed to the first volume of poems (1810) by the Rev. James Hurdis, D.D., Professor of Poetry in the University of Oxford, the circumstances of the author's death are thus described: "On Saturday, Dec. 19th, 1801, he went to Buckland in Berkshire and on the day following performed the whole of Divine service at that church. On the Monday evening he was attacked with a violent shivering, similar to that of an ague fit. On Tuesday he was unable to rise from his bed, complaining of great inability and heaviness upon his eyes, which prevented him from opening them. Every medical assistance was procured but to little effect, as he expired, apparently in a sound sleep, on the Wednesday evening, in his thirty-eighth year." It is a pity that no indication of the line of treatment adopted is given, but at that time bleeding was customary and was doubtless practised in this case. It certainly seems strange that a

healthy young man should die "in a sound sleep" after an illness of only 48 hours. In a letter to the poet Cowper, of which a copy is given in the "Account," Dr. Hurdis himself alludes to the death of another sister in the following terms: "I watched by her nine-and-thirty nights. ..... I have seen my amiable and affectionate Catharine gradually put to death by a disease at once painful and lingering. ..... She had suffered extremely, and for nearly a week before her death had only short intervals of sense, in which she was unable to articulate her wants. In the evening on which she died her senses returned, and she acknowledged us all, rewarding us with many thanks for our attention to her. She was then seized with a difficulty of breathing and slight convulsion, which did not appear very alarming to me, because I had seen her recover from the same symptoms before. I was the only person in the room when these began to abate, and she seemed to fall into a sound sleep, breathing without difficulty. I sat beside her, looking in her face, and the ease with which she slept soon inclined me to nod. I almost fell from my chair more than once; and being apprehensive that I might disturb her if I persisted I went into the next room, to lie down upon a mattress which was on the floor. I met my eldest sister at the door, and desired her to give me notice when I was wanted. I had scarce laid myself down when she came and informed me that her breath had ceased. I returned immediately into the room and was witness to two slight efforts made by nature to recover the action of the lungs; which not being attended with success she gave up the contest without deranging a single feature. The eyelid was still closed, the hand reclined upon the side of the easy chair, into which she had been partly raised from the bed, and not one attitude of the composure in which I left her had been disturbed."

FOREIGN EYE CLINICS.

To the Editors of THE LANCET.

SIRS,—I should be glad if you could tell me where I could obtain information respecting fees, cost of living, &c., at the different "eye clinics" in Germany and Austria. Is a knowledge of each language a necessity? If any reader of THE LANCET would oblige with a brief summary of his personal expenses and experience it would be deemed a great favour. I am, Sirs, yours faithfully,

June 2nd, 1902. THECLA W-ALBUM.

THE INJECTION OF COCAINE AND THE MORPHIA HABIT.

To the Editors of THE LANCET.

SIRS,—I have a patient who has contracted the morphia habit. He injects daily seven or eight tabloids of morphia sulphate (one-eighth of a grain) and atropia sulphate ($\frac{1}{120}$th of a grain). I should be glad to hear if any of your readers have tried to counteract the habit by the injection of cocaine and, if so, what doses would they advise?

I am, Sirs, yours faithfully,

May 30th, 1902. F. G. B.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of a home or institution suitable for a feeble-minded girl, aged 18 years, belonging to parents of the working-class? I am, Sirs, yours faithfully,

B. BROWN, M.R.C.S. Eng., &c.

3, London-road, Bromley, Kent, June 2nd, 1902.

THE "Y" FUND.

SURGEON-GENERAL H. S. MUIR begs thankfully to acknowledge additional donations towards the above Fund from Dr. L. G. S. Molloy (Blackpool), Dr. J. A. Rigby (Preston), Dr. J. Gordon Black (Harrogate), Dr. W. A. Elliston (Ipswich), Dr. H. Townsend, Mr. S. Chard, Colonel Warburton, I.M.S. (retired), Lieutenant-Colonel O. K. Powell, I.M.S. (retired), Major A. Coleman, I.M.S., and the following officers of the Royal Army Medical Corps: Colonels J. J. Macnamara and A. W. Duke; Lieutenant-Colonels W. W. Kenny, O'B. White, J. Barrye, W. Donovan, C.B., Ward, F. P. Nichols, and G. A. Hughes, D.S.O.; Majors R. H. Penton, D.S.O., J. V. Salvage, J. W. Cockerill, Barnett Wilson, E. M. Hassard, A. B. Cottell, and J. M. Irwin; and Captains H. W. H. O'Reilly and J. D. Alexander. The fund now amounts to £224. It may be explained that this is in response to an appeal made privately to members of the profession for benevolent aid in a distressing case which has been described in a letter sent to a limited number of medical men (who would help the cause by kindly "handing on" to *confrères*). Should any reader of THE LANCET desire further particulars with a view to expressing *practical sympathy*, a copy of the letter will be forwarded on application to Surgeon-General Muir, 26, Kensington-gardens-terrace, Hyde Park, London, W.

THE PREHISTORIC REMAINS RECENTLY ACQUIRED BY THE BRITISH MUSEUM.

To the Editors of THE LANCET.

SIRS,—I do not think that the inference drawn by Mr. R. Henslowe Wellington in his letter appearing in your issue of May 3rd, p. 1293, with reference to the reconstructed burial in the British Museum is warranted by the facts. I have recently had an opportunity of seeing the prehistoric cemetery in the Girga province here, which is being excavated with the most minute care and accuracy by Dr. G. Reisner of Harvard University and his assistants, and I do not think there is any doubt whatever that the bodies were actually laid on their sides for burial, either in mats or baked clay coffins, and that this position is not due in any way to gravitation. If this were so it would be difficult to account for the regularity with which the bodies in this cemetery are found on the left side. I may say that the site shows no signs of having been disturbed and many of the bodies are almost perfectly preserved (not by artificial means), though the date of their burial may be put at somewhere before 3000 B.C.

I am, Sirs, yours faithfully,

Kolosna, Upper Egypt, May 23rd, 1902. A. T. WHITE.

B. T. R.—1. By the provisions of Section 4 (2) of the Notification Act, 1889, it is enacted that "the local authority ..... shall pay to every medical practitioner for each certificate duly sent by him in accordance with this Act a fee of 2s. 6d. if the case occurs in his private practice, and of 1s. if the case occurs in his practice as medical officer of any public body or institution." The parish cases referred to by our correspondent would come under the 1s. group. He would find a copy of the Infectious Disease (Notification) Act, 1889, useful for purposes of reference. 2. (a) There is no provision for the payment out of the public funds for the revaccination of children under 10 years of age, and our correspondent will, we think, find this *proviso* in his contract with the guardians. (b) Similarly the contract will show that the fee for revaccination at the home of the patient is not the same as that for revaccination performed *elsewhere* than at the home of the person revaccinated. (c) As a public vaccinator cannot, in his official capacity vaccinate or revaccinate persons resident outside his vaccination district the guardians have no power to pay for such vaccination. The clerk is, we think, right on every issue and we should counsel B. T. R. not to press the matter further. He should make himself quite familiar with his contract and procure for reference "Shaw's Manual of the Vaccination Laws," published by Shaw and Sons, Fetter-lane, Fleet-street.

K.I.T.—It is a very usual, but a most irregular, practice for relieving officers to procure an informal certificate from the medical attendant of a person alleged to be of unsound mind before they remove the patient to the workhouse, so that this may, if necessary, be shown in justification of the removal. This is a practice which all medical men should be aware of and studiously avoid, for such a certificate is not covered by law and they run great risks of an action at law by the patient after recovery or by his friends. If it was a certificate of this kind which our correspondent gave he can claim no fee—indeed, he may think himself fortunate if he escapes the action at law to which we have referred. If, on the other hand, the certificate he gave was on the form prescribed by the Commissioners and at the request of a justice of the peace conveyed to him through the relieving officer, he will be fully entitled to such fee as the justice orders and the guardians have no option but to pay.

Locum Tenent.—We do not think any time can be stated when the proceeding would be unobjectionable. A locum-tenent should never return to a locality where he has been doing the work of other medical men in return for a salary. Whatever his real idea may be, it must always appear that he has returned in the hope of detaching patients from a previous employer. Our correspondent will understand that our reply is based upon the general question; he has mentioned no particular circumstances.

S. W., M.D.—Our correspondent will find the information he seeks in a work entitled "Clinical Hæmatology," by Dr. J. C. Da Costa, jun., published by Rebman, 129, Shaftesbury-avenue. By the word "hæmatology" is understood "the science of the blood, its nature, functions, and disorders."

Degree.—Any man possessing a doctorate given by a recognised university is a "doctor." Medical men are sometimes styled "doctor" because they happen to possess such a degree and sometimes because it is the time-honoured and popular method of addressing them.

Spero and other correspondents who have written to us on the subject of the proper "kit" for medical officers in the Yeomanry and Volunteer corps will find their questions answered under the heading of "The Services" on p. 1642 of our present issue.

Public Vaccinator is thanked for sending us the newspaper cutting. The subject of vaccination fees is at the present moment under the consideration of the President of the Local Government Board.

J. C. L.—No.

During the week marked copies of the following newspapers have been received:—*Hong-Kong Daily Press, Allgemeine Medicinische Central-Zeitung, Il Policlinico, Aberdeen Free Press, Revista Medica de San Paulo, Echo, Bristol Mercury, Liverpool Daily Post, La Caduceo, Hong-Kong Weekly Press, Times of India, Reading Mercury, Local Government Chronicle, Hertfordshire Mercury, Windsor and Eton Express, Sunday Magazine, Kensington News, St. James's Gazette, Ibero-Americana de Ciencias Médicas, Pharmaceutical Journal, Manchester Guardian, Dublin Evening Telegraph, Southampton Echo, Coventry Herald, Belfast News, Birmingham Daily Mail, Scientific American, Literary Digest (New York), &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 5th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Temp.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
May 30	29·65	E.	0·19	79	66	49	51	52	Overcast
,, 31	29·66	SSE	0·20	117	70	52	58	61	Cloudy
June 1	29·72	S.E.	0·02	109	66	51	57	63	Cloudy
,, 2	30·06	S.	0·03	118	74	57	53	57	Cloudy
,, 3	30·03	S.E.	0·41	113	78	54	55	58	Cloudy
,, 4	30·00	W.	0·22	88	65	57	56	58	Cloudy
,, 5	30·05	S.W.	0·11	113	65	55	56	59	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.).

TUESDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (11th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (12th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (14th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (10th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Adjourned Discussion on Mr. T. J. Tonkin's paper on Some General and Etiological Details concerning Leprosy in the Sudan, and on Mr. J. Hutchinson's paper on Leprosy in Natal and Cape Colony. Papers:—Mr. H. Gilford: An Account of a Disease which is characterised by Conspicuous Delay in the Processes of Growth and Development—Ateleiosis.

WEDNESDAY (11th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

THURSDAY (12th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Instruments and Specimens will be shown by Mr. H. Smith and others. Paper:—Dr. H. Snow: Is there any real Deciduoma Malignum.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—Cases and Specimens will be shown by Mr. N. T. Yarr, Mr. J. H. Parsons, Dr. L. Buchanan, Mr. M. S. Mayou, Mr. A. Lawson, and Mr. W. T. H. Spicer. Papers:—Mr. W. C. Rockliffe: (1) Further Note on a Case of Secondary Carcinoma affecting both Eyes; (2) Notes on a Case of Leprous Ulcer of the Cornea.—Dr. A. Bronner: Notes on Two Families with Congenital Microphthalmos and Cataract.—Dr. L. Buchanan: Keratitis, Evidence of the Proliferation of the Corneal Corpuscles.—Major H. Herbert, I.M.S.: Colloid Degeneration of the Conjunctiva.

FRIDAY (13th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—4.30 P.M. Prof. Fuchs (Vienna): Keratitis. (Bowman Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. FOX: Clinique. (Skin.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Treatment of Injuries.

TUESDAY (10th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. Broadbent: Clinique. (Medical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. J. A. Moullin: Antiflexion of Uterus, Dysmenorrhœa, and Sterility.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Ormerod: Anterior Poliomyelitis.

WEDNESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. J. Freyer: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Cole: Dementia and Paralytic Dementia.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Kidd: Bronchiectasis.

THURSDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Medical Anatomy and Physical Diagnosis.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. H. S. Collier: Demonstration of Selected Cases.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Murray: Demonstration of Medical Cases. (Post-Graduate Course.)

FRIDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Reece: Chronic Poisoning by Minute Doses of Lead and Arsenic.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

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